Textile World

A McGRAW-HILL PUBLICATION

FEBRUARY, 1939

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TEXTILE WORLD (formerly *Textile World Journal*) with which are combined *Textiles, Posselt's Textile Journal and Textile Advance News*. Published monthly. United States and Possessions, and Canada, $3 per year; all other countries, $5, U. S. currency, or 20 shillings. Single copy 35 cents.

Of this issue, 12,775 copies were printed

MEMBER OF AUDIT BUREAU OF CIRCULATIONS
MEMBER OF ASSOCIATED BUSINESS PAPERS, INC.

Contents copyrighted, 1939
by McGraw-Hill Publishing Co., Inc.

McGraw-Hill Publishing Co., Inc., 330 W. 42nd St., New York, N. Y.

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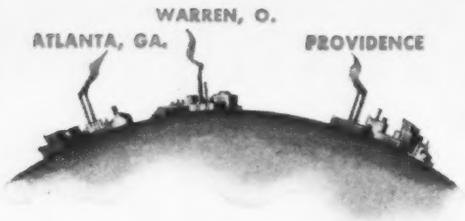
PLANT 

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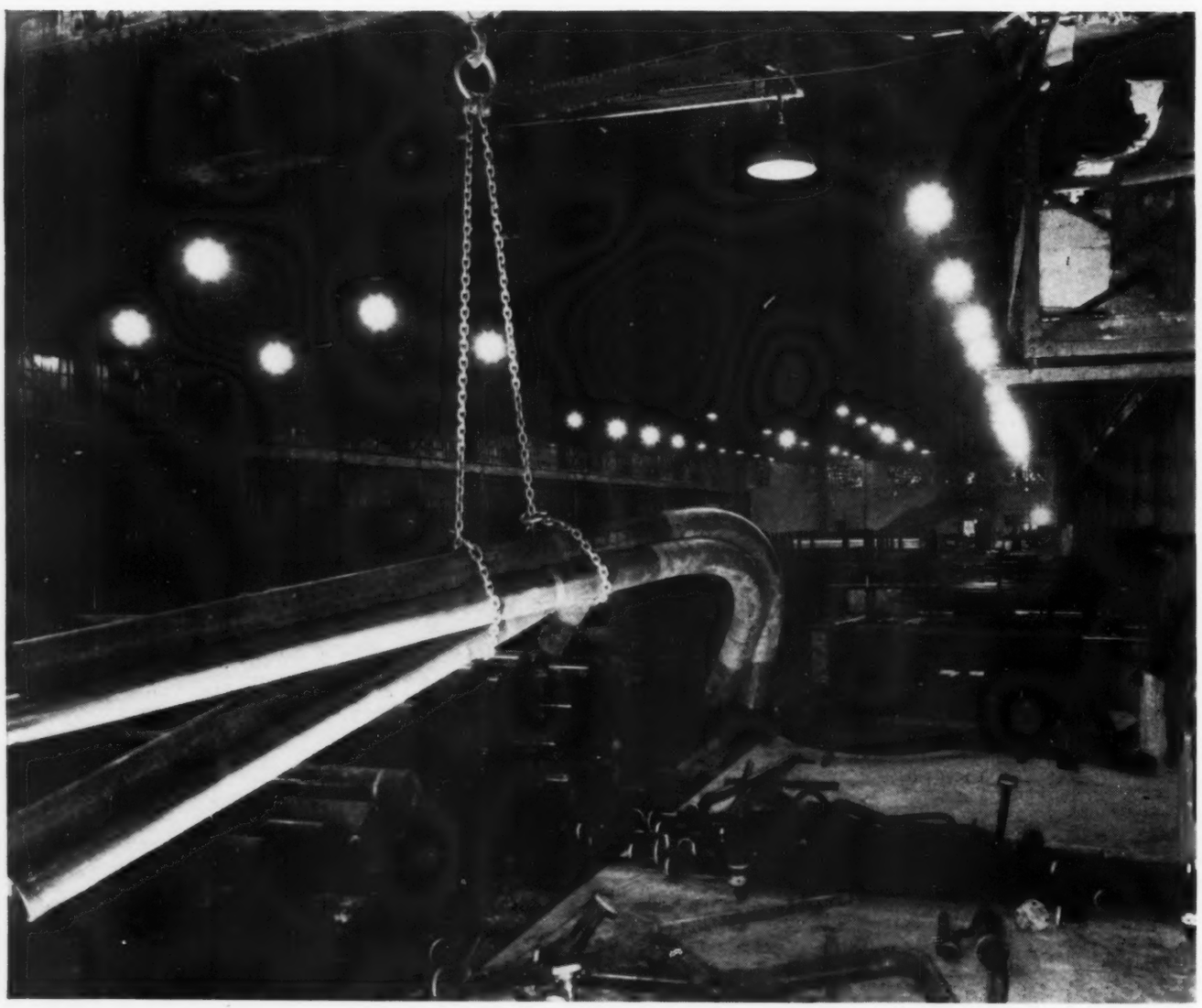

Textile World

FEBRUARY, 1939

DOUGLAS G. WOOLF, *Editor*

How to Profit Even from a Labor-Board Hearing

HERE is a suggestion to textile manufacturers: When you hear of a National Labor Relations Board hearing in your vicinity, attend some of the sessions. It will be worth your while.

You will learn, first, how a badly conceived law, badly administered, can magnify minor local differences into major issues, and thus prevent, rather than promote, sound employer-employee relations. You will also learn how bias in the administration of a biased law can extend from the Board itself to the examiners and counsel, with the result that the employer comes into "court" with almost no chance of getting anything resembling what we in the United States used to call a fair deal.

Fortunately, some of these defects in the act may be corrected in this session of Congress. This should be the principal objective of business in Washington just now.

However, there is something else to be learned from such attendance—and this is a very practical something which every manufacturer can use to advantage.

As the result of our own experience as a spectator at these hearings, we are convinced that the great majority of the complaints brought under the law were trumped up on the basis of no real justification in fact. We are further convinced, however, that in those cases where the complaining parties had real grievances, the fault was due almost entirely to the fact that the overseers and other subexecutives did not properly represent the management to the workers.

•

It would be easy enough to put a "period" here and let the poor overseer take the rap. But that would be inaccurate and unjust. There are of course some mean, even vicious, overseers just as there are some mean, and even vicious, employers. However we are convinced that the great majority of both groups want to do the best sort of a job they can. (That's not Pollyanna talk; it's the result of years of observation.) Failure to do a good job is usually due to the lack of a properly developed channel through which the ideals of the management may be transmitted and interpreted to the employees. Obviously, the overseer group is the only possible nucleus. But it does not just function so, by accident; it has to be fostered by most careful executive action and thinking.

This means what is usually called foreman training. That term is correct so far as it goes, but actually what we are talking about means not only training in technique and industrial relations, but a virile and continuing contact between the chief executives and their operating executives, based upon mutual understanding and mutual respect. There must be a regular organization—of the type usually referred to as foremen's council—in which the two groups are mutually frank. If the chief executives merely dish out apple-sauce, or if the operating executives merely act as yes-men, the whole effort will be a failure.

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To many manufacturers, the ramifications of such a relationship will be a revelation. Apparently-small grievances will be uncovered which are disturbing the harmony of the whole organization. Similarly, apparently-small remedies will suggest themselves, which will build up morale and mutual confidence. Just as one example of the latter: How many employers give any continuing thought to the granting of voluntary salary increases to the key personnel? How often is not the reverse true—that the employer waits until an operating executive gets an offer elsewhere, and then reluctantly meets it? We know that there are countless cases of overseers who have long nursed resentment against the management for failure to even consider salary advances until forced to do so. And yet a voluntary 10% increase is more of a morale-builder than a forced 25% increase.

This example may seem small—but industrial relations are made up of little things. In the aggregate, however, these little things can mean the difference between an efficient and a sloppy organization; between profit and loss.

[See our Annual Number, later this month, for more on this same subject.—*Advt.*]

THE EDITOR SAYS

A Great Step Toward Sanity

ONE of the most important steps in the history of the textile industry was taken Jan. 26 when the National Council of Textile Industries was tentatively formed, to serve as a coordinating group among the cotton, silk and rayon groups, and eventually, it is hoped, among all the branches of the industry. When approved by the Cotton-Textile Institute, the National Federation of Textiles, and the National Rayon Weavers Association, this Council will deal with matters of common interest, involving policy. Its set-up is such as to permit the other textile associations to join.

The background of this specific movement is known to our readers. It grew out of the close association of the cotton, rayon and silk groups in the work of the Textile Committee under the Wage-Hour Administration. Recognizing the need for community of policy, Dr. Claudius T. Murchison took the lead in establishing a coordination committee. Out of this is developing a Council whose scope will be much broader than merely the Wage-Hour Act zone—and will in fact include all broad questions of policy which the industry as a whole, and consequently its component parts, face.

Our own attitude in this matter is also known to our readers. Five years ago last December, we started a movement for closer coordination of the textile trade associations. Our original suggestion was for an American Textile Institute, consolidating the medley of organizations serving this field. Subsequently, it seemed advisable to take an intermediate step—the formation of a Textile Council, representing but not absorbing the various associations—and we have pushed that project vigorously.

That step has now been taken—and we rejoice in it as a move toward sanity in a field which sorely needs sanity.

The absence of a united front in an industry which every day faces new impulses creating new problems, is almost incredible. It would be ludicrous, if it were not so tragic. We are not referring merely to defense against attack by pressure groups, and against the threats from cock-eyed legislation—although this is naturally part of the picture. We are even more concerned with those vast problems of production policies, merchandising, promotion, research, statistics, industrial relations, etc., all of which offer a common ground for constructive effort, and none of which can be solved, adequately, by any branch alone.

The proper development of this Council will mean more to the well-being of textile employers and employees than any other step we can recall. We hope eventually it may develop into one trade association—what might be termed an American Textile Institute, as we have indicated previously—but for the present, and probably for some time to come, its function probably should be limited to coordination rather than extended to amalgamation.

Congratulations to the three groups involved! We earnestly urge the cooperation of the other groups in the industry so that the Council may rapidly take its place as the spokesman for a great basic industry.

Wage-Hour Group Doing Good Job

IT is increasingly evident that the Textile Committee under the Wage-Hour Administration is doing a statesmanlike job. Faced with one of the toughest assignments imaginable, it is approaching its task with quiet earnestness rather than with an eye peeled for head-lines.

The decision to make the Wool Committee 1A, with a certain interlocking in the public and employee members, is a sound one, and in the direction of this writer's oft-repeated plea for closer coordination among the branches of the textile industry. Specifically, the problems to be faced by the two committees are so intertwined that any attempt to tackle them from two separate quarters would be sheer folly.

It is especially good to note that Donald Nelson is serving as chairman of both committees, and that Dr. George W. Taylor is also "doubling in brass" by serving as vice-chairman of 1A. Both these men have demonstrated in many ways, and on many occasions, their breadth of vision and their knowledge of industrial fundamentals.

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Just now, this is "talk-time" in Washington so far as the Textile Committee is concerned. Almost anybody—except members of the committee—can tell you exactly what is going to be done on this, that, or any other phase of the problem. However, one reason why this advice might be questioned is the fact that not even the committee itself knows yet what the answers are going to be.

One of the rumors has been to the effect that a complicated series of rates for all the different jobs in a mill would be established by the committee, and that this would be done separately for each branch of the industry. Unless we have mis-judged the caliber of the members of the committee, we are confident they will hesitate long before establishing such occupational minima. Granted that differentials between skilled and unskilled labor may be necessary, there certainly is no reason for, or possibility of enforcement of, detailed classifications. In fact the act itself was not designed to freeze wage rates in this way. Its purpose is to set a floor below wages and a ceiling above hours, in order to prevent collapse of labor standards such as occurred in the depths of the depression. The simpler form such protection takes, the less danger there is of the growth of a bureaucratic octopus, and the more prospect there is of the permanence of this whole undertaking.

We suggest that manufacturers should not get too excited over rumors such as the above, but that instead they wait until the recommendations of the Textile Committee are announced. Its personnel and its record to date promise a sane, workable program.

Cleaning Up After Wallace

TEXTILE manufacturers are only too familiar with the broad results of Secretary Wallace's monstrosity of a cotton program. They know only too well that each of those results has been the reverse of what was intended. Loss of a large part of our foreign market; encouragement of bumper crops; an all-time record carryover; a price maintained only by loan rigging—these are what the country has bought for its hundreds of millions of dollars.

As noted, the textile industry knows all this. But every little while, it learns something more about the operation of the Wallace Whoopee. Recently it has realized clearly that the so-called "inverted" cotton market has a paralyzing effect upon for-

ward buying of cotton goods. Stripped of technicalities, this term means that near months are selling higher than later months, whereas the reverse is the normal situation. At the moment, for example, spot cotton is selling more than 1c. above July. In the words of one Worth Street merchant, how can you expect a hard-boiled cotton goods buyer (and they're all hard-boiled, of course) to cover any but his most urgent needs, when there is every reason to anticipate a lower basis a few months from now?

The answer, of course, is silence—and not too much of that.

What is the solution? A free cotton market, of course. But every sane man knows that a market tied up with all the variety of chains forged by Secretary Wallace in recent years cannot suddenly be turned loose.

The main issue is the pressure of 11,000,000 bales of Government loan cotton. The trade is now used to using that figure, and has almost forgotten to gasp at it each time. And yet it is still the most fantastic fact in the whole bizarre history of King Cotton.

We nosed around Washington recently, to see what might be expected as a means of dealing with this loan problem. We found dozens of different ideas—some of them possible, most of them impossible. But we found no one clear-cut line of thinking which gave hope of an early approach toward solution of the problem.

We have never written cotton legislation, and don't expect to start now. But it would seem that the most important considerations are, first. an arrangement for orderly liquidation of existing surplus over a period of time at a rate known in advance to the trade; and, second, a definite provision for the prevention, or at least limitation, of further accumulations of loan cotton.

Out of the mess that the Department of Agriculture has made of this cotton situation, Congress must now produce a remedial program. The Agricultural Committees will need all the help they can get. Cotton-textile manufacturers and their association officials are urged to cooperate with those committees to the utmost, during the next few months. They have a definite stake in the whole proceeding.

THE MILL OF THE YEAR

The story of the new Mathews mill and village, at Greenwood, S. C., is told in words and pictures in the special insert starting on page 57 of this issue.

Comments on Cotton Futures Article, and Answers

Not Partisan

NEW YORK, N. Y.

Editor, TEXTILE WORLD:

The article in the December issue of the TEXTILE WORLD, entitled "Cotton Futures Maladjustment" has come to our attention, and I regret to have to say that it contains certain misstatements.

In view of the high standing of the TEXTILE WORLD, we feel confident that these misstatements were made unintentionally, but we would ask you kindly to publish the corrections of them as contained in this letter.

The article says "The cotton shippers (as represented by the exchanges) . . ." It further says "The exchanges propose to add $\frac{31}{32}$", $1\frac{1}{32}$", and $1\frac{1}{16}$" . . ."

The New York Cotton Exchange, its executives officers, and its board of managers do not in any way represent either the cotton shippers or the manufacturers in their differences over the present futures contract nor has the exchange proposed any change in the contract nor taken any position as to the merits or demerits of any change suggested.

The facilities of the exchange are used by the entire cotton industry throughout the world, and it is and will continue to be the constant effort of the exchange to strive to serve the best interests of all sections of the industry.

A committee representative of associations of shippers and manufacturers is preparing to give the questions under discussion exhaustive study and will report its findings in due course.

ALSTON H. GARSIDE, *Economist*
New York Cotton Exchange

NOTE: The author of the article in question is grateful to Mr. Garside for bringing the above point to the fore so promptly and so positively. The mistake was made inadvertently and the author is delighted to have it corrected.

Deliverable Grades

WASHINGTON, D. C.

Editor, TEXTILE WORLD:

In your December 1938 issue of the TEXTILE WORLD there appeared an article entitled "Cotton Futures Maladjustments" which, I presume, was written by a cotton expert although no name was signed to the article. However, I noticed appearing in the article two misstatements.

In one place, the author states that on the present contract 15 grades and 3 staples are deliverable. On the present New York Cotton Exchange contract 20 grades and 3 staples are deliverable which increases the total of 45 as given by the author to 60.

In another place he intimates that more than one delivery point can be used on one contract. This is an error since only one delivery point can now be used in any of the cotton futures markets in the United States with the exception of Galveston and Houston which are considered as the same port.

These discrepancies are not brought to your attention with any thought of depreciation of the article but to suggest that it is always well to check and double check statements that are made on technical subjects. Please pardon my presumption in writing you.

W. W. HARGRAVE

In discussion of the present cotton futures contract at the annual meeting of the Cotton-Textile Institute and elsewhere within the last 3 or 4 months, it was stated by members of the cotton trade without evident contradiction that it "includes 15 different grades and 3 different staples . . . hence it embraces 45 separate qualities." We took that statement on its face value. Thanks to Mr. Hargrave, we are glad to have the opportunity of stating the fact that 20 different grades are actually deliverable on the New York Cotton Exchange contract. There would be some truth to a statement that there are only 15 *premium* grades, since we are told by cotton authorities that there are five listed grades of "extra white" which take the same premium as "white." It was presumably on this basis that the first-quoted statement was made.

As to the delivery-point against a futures contract, Mr. Hargrave accurately says "intimates," since we did not state that more than one point was permissible at present. That "intimation" appeared among a list of suggestions by spinners for improving the value of the contract. It also appears in a set of resolutions passed by the North Carolina Cotton Manufacturers Assn. early last November. It was included in those resolutions as a restatement for future protection against any possibility of rescinding that provision.—*Editor.*

NEWS OF THE MONTH

Legislative Outlook

Prospects on most legislation at the present session of Congress are anybody's guess. Here are a few cautious estimates from our Washington office:

Crop Control: A sizable bloc proposes that the Pope-McGill five-crop control law be plowed under and something else put in its place that will work quickly. Wallace and his friends plead for time and warn against hasty change. But opponents answer that the country can't wait for relief from farm dilemma. They propose remedies revolving around the principle of pegged or fixed prices on domestic consumption and dumping the balance into the foreign market or into relief agencies at home. Sober observers feel the domestic allotment plan, now proposed by a group of Senators, is inadvisable. They predict that this session will satisfy itself by tinkering with the old AAA machine.

Fiber Identification: Schwartz-Martin wool identification bill is up in Congress. Predictions are all but worthless, but the balance seems to be weighted against passage of the bill.

Defense: President Roosevelt will get all the airplanes, pilots, tanks, guns and battleships he asks for to defend the United States. Congress will draw the line where the strength of armament begins to look equal to an expeditionary attack.

Labor Relations Act: AFL-sponsored amendments to NLRB are destined for enactment, in whole or in part, according to impartial Washington opinion. As one labor writer put it, "There seems to be nothing in the amendments which could reasonably be objected to." CIO will of course object to them to the bitter end.

Taxes: Economy is the mode of the day in Congress but it is only a gesture. Behind it there is no will to economize. As much as or more money than usual will have been spent when the session is done. Where to get the money? The President and the Secretary of the Treasury are against processing taxes. The treasury is supposed to be framing a new schedule which will produce half a billion for farm and defense programs. Only one new source of revenue is now in prospect: increased surtax rates.

Merchants Urge Cotton Action

Members of the Association of Cotton Textile Merchants of New York, at a luncheon last month in honor of Dr. Lawrence Myers of the Department of Agriculture, urged correction of the false market situation created by the descending scale of cotton futures prices. Explaining the reluctance of distributors to make forward purchases of cotton goods in the face of this abnormal and misleading market for raw material, the merchants insisted that more goods would be sold and more cotton consumed through a restoration of the normal relationship in cotton prices whereby the prices on later deliveries would reflect the added cost of unavoidable carrying charges, such as storage, insurance and interest.

Since the inverted scale of prices is due to relative scarcity of spot cotton created by Government loans which cannot be liquidated, the merchants urged that action be taken to ease the situation through the gradual release of Government holdings.

Cotton Reserves For War

One of the numerous proposals to reduce the 10,000,000-bale surplus of cotton held by the Federal Surplus Commodity Corp. is that a permanent reserve of cotton for war needs be purchased with defense funds. Even though in a sense the procedure would be a matter of bookkeeping, observers believe that the plan has some merit in that the surplus would no longer tend to depress prices. A study is being made at the present time to determine how much cotton the Government would need in war.

CELEBRATING the 300th anniversary of the reign of Louis XIV, Saks Fifth Avenue, New York, devoted a series of six windows to the promotion of "Versailles Gold" printed pure-dye silk crepon resort fashions for day and evening. Photo shows a stylized Marie Antoinette bow carried out in pleating on the bodice of this spectator sports dress. There are white medallions centered on magenta and green.

Public Relations High Spots

Here are a few of the public relations jobs done recently: Rochambeau Worsted Co., Percy A. Legge, selling agent, has issued a booklet, "Thumbnail Sketches of Interesting Fibers," which should do a great deal to add to general knowledge of such materials as angora, alpaca, camel hair, cashmere, China lamb's wool and vicuna. It is an exceptionally well prepared booklet. . . . Eavenson & Levering Co. are merely continuing the excellent job they have done right along through "Making the Grade with Wool" by starting in January a series of several articles on the subject "This Is Wool's Story!" dealing with the beginnings and growth of the wool industry through the ages. . . . A non-textile company, but one which has an interest in the textile industry, has done exceptional job in analyzing its stock ownership. The Monsanto Chemical Co. made a survey as one answer to the frequent allegations by pressure groups that "60 families control the assets of the country." Monsanto's 1,291,816 American shares are held by 10,170 stockholders. The largest stockholder owns personally less than 3.4% of the total.

Yarn Rules In Effect

The Cotton Yarn Rules of 1938 went into effect Jan. 16, prior to which date copies of the rules had been placed in the hands of every yarn agent in the country. The rules were prepared by the joint action of the Southern Combed Yarn Spinners Association and the Carded Yarn Group.

These two organizations compiled the rules several months ago, and after careful study and revision the rules were endorsed by the membership of the two groups.

The Southern Combed Yarn Spinners Association had placed the rules in effect Oct. 24 and during the next three months over 9,000,000 lbs. of yarn had been sold subject to them, without a single protest on the part of the customers, according to Mrs. Mildred G. Barnwell, executive secretary. Owen Fitzsimons is executive secretary of the Carded Yarn Group.

ACMA in New Orleans

American Cotton Manufacturers Association will hold its annual convention at Roosevelt Hotel, New Orleans, La., April 13, 14 and 15.

Cotton Council Meets

Plans for carrying out the program of a National Cotton Council were formulated at a meeting in Dallas, Tex., Jan. 24. The organization has set $250,000 as a goal for the first year, and has already raised $100,000. The funds will be spent on an educational and promotional campaign for cotton.

Oscar Johnston of Scott, Miss., was elected president. Vice-presidents include Daniel C. Roper, of Hartsville, S. C., formerly Secretary of Commerce; Lamar Fleming, cotton merchant of Houston, Tex.; and Harold Young, a producer of Little Rock, Ark. William Rhea of Stoneville, Miss., is secretary, and William T. Winn of Greenville, Miss., treasurer.

The Council will cooperate with the Cotton-Textile Institute in promotional plans, including style shows.

For Long-Term Plan

If the cotton grower is to be saved as a farmer, cotton must first be saved as a commodity, declared Dr. Claudius T. Murchison, president of the Cotton-Textile Institute, before the meeting of the National Cotton Consumption Council in New Orleans, La., Jan. 30. "We must pursue the objective of new uses and lower costs," said Dr. Murchison. "On the scientific side, laboratory research experimentation must be relentlessly exploited. On the consumption side we must explore every nook and cranny of industrial and individual want. Such efforts, well organized, well financed and persistently followed have an excellent chance to produce startling results both on the side of uses and of costs."

Wholesalers Seek Mill Cooperation

At the annual meeting of the Wholesale Dry Goods Institute, Hotel Commodore, New York, Jan. 19, much time was devoted to the relationship between manufacturer and wholesaler. William H. Gosch, vice-president of Nolde & Horst Co., Reading, Pa., spoke on the problems of the manufacturer.

Arthur B. Port, vice-president of P. H. Hanes Knitting Co. addressed the wholesalers at their closing session. He stressed the fact that the marketing objective was orderly distribution of goods at a profit.

TEXTILE MILL SIDE-LIGHTS—NO. 2

"Look Guntel! I do believe the cloth in that dress is made from our special F102-23 yarn!"

To Meet At Greenville

The Southern Textile Association and the regional division of the American Society of Mechanical Engineers will hold conventions at Greenville, S. C., during the Southern Textile Exposition, Apr. 3 to 8. In addition, deans of the textile schools have been invited to meet there during the week. Practically all exhibition space has already been leased.

Retailers Learn About Textiles

Establishment of generic terms for various types of rayon fabrics was advocated by H. W. Rose, of American Viscose Corp., at a meeting of the Merchandising Division, National Retail Dry Goods Association, during the latter's annual meeting last month in New York. Mr. Rose suggested that the NRDGA organize a committee, with representatives of rayon producers, mills, converters, and stores, to list current established rayon fabric groups, give them names, register the names, and publicize these names.

Dr. S. J. Kennedy, of Pacific Mills, stated that to prevent customer dissatisfaction with textiles it is necessary to develop standards in the manufacturing process. These standards should have fixed meanings, with terms that mean something to the consumer.

The need for studying the performance of fabrics in use and not evaluating them on laboratory tests alone was discussed by Alexis Sommaripa, of E. I. du Pont de Nemours & Co.

Other papers presented were "Protection of Fabrics from Destruction by Moths," by Dr. A. B. Snyder, of Merk & Co.; and "Durable Finishes on Textiles," by Dr. Samuel L. Lenher, of E. I. du Pont de Nemours & Co. Ephraim Freedman, of R. H. Macy & Co., presided.

Whitman to Sell MarshallFieldRayons

Marshall Field & Co., manufacturing division, have concluded another sales agency arrangement with William Whitman Co., Inc., New York. Only a few weeks ago the Whitman company assumed the sales agency of the woolen and suiting piece

Textile Calendar

- *Committee D-13, A.S.T.M., 25th anniversary meeting, Providence, R. I., Mar. 1 to 3, 1939.*
- *American Association of Textile Technologists, meeting, New York, Mar. 1, 1939.*
- *Philadelphia Textile School Alumni Association, annual banquet, Philadelphia, March 3, 1939.*
- *Southern Textile Exposition, thirteenth show, Textile Hall, Greenville, S. C., April 3 to 8, 1939.*
- *Southern Textile Assn., meeting during show week at Greenville, S. C.*
- *American Cotton Manufacturers Association, annual meeting, Roosevelt Hotel, New Orleans, La., April 13 to 15, 1939.*
- *Knitting Arts Exhibition, 35th annual show, Commercial Museum, Philadelphia, April 17, to 21, 1939.*
- *Piedmont Section, A.A.T.C.C., regular meeting, Greensboro, N. C., April 30, 1939.*

goods mills of Marshall Field. The latter's silk and rayon mill located at Spray, N. C., run exclusively on greige goods, will be styled, merchandised and sold by the Whitman firm from their downtown office, which is under the direction of James P. Kinard, Jr., assisted by "Ted" Bumpstead.

Southern Farm Lab. at New Orleans

The four regional research laboratories under the Dept. of Agriculture which were authorized by the 75th Congress have been fixed as follows: Northern region, Peoria, Ill.; Southern, New Orleans; Eastern, Philadelphia; and Western, San Francisco Bay Area.

Dr. Henry G. Knight, Chief of the Bureau of Chemistry and Soils, has announced that O. E. May would be director of the Peoria station; D. F. J. Lynch, of New Orleans; P. A. Wells, of Philadelphia; and T. L. Swenson, of San Francisco.

Notes of the Rayon Trade

The new strong rayon staple-fiber of American Viscose Corp. has appeared in the fabrics market in a new and unusually sheer style offered by Federated Textiles. The fiber itself is being offered in standard sizes of 1.5 denier, 1-$\frac{1}{16}$ in. staple and 1.25 denier, 1-$\frac{7}{8}$ in. staple. It is reported to be possible to spin commercially yarns as fine as 120s (cotton count).

American Enka Corp. has moved its New York offices to 200 Madison Ave. on the ground floor, from their previous location at 271 Church St. The new quarters will be both sales and showroom headquarters.

American Viscose Corp. is now offering Fibro staple fiber, spun-dyed in both black and colors. The black is 30c. and the colors 34c. In the latter are two shades of brown and two shades of gray.

Fishing lines of Nylon, DuPont's new type synthetic yarn are being introduced by the Ashaway (R.I.) Line & Twine Mfg. Co. The lines are braided and are said to display remarkable strength for their size.

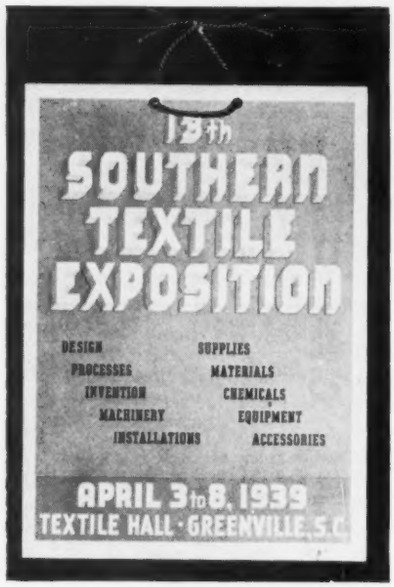
Durene Sales Film

Durene Association of America recently held a preview of the sound slide film "King Cotton's Crown" produced by the association for sales-training use by manufacturers and retailers. The film dramatizes those qualities of Durene mercerized cotton yarn which are important in finished garments.

Cottons Hold Own

Volume of gray cottons which changed hands in January was not too encouraging despite one bulge in print cloths which looked promising for a while. Quotations rose $\frac{1}{8}$ to $\frac{1}{4}$c., only to slip back during succeeding days of trading. General outlook continues to be reasonably optimistic for next few months despite several adverse factors.

WINDOW DISPLAY shows how Gotham Silk Hosiery Co. utilized the work of "The Colordinators" in offering Tamerlane Tones for spring 1939, in related dress accessories. The group in addition to Gotham consists of one manufacturer each of clothes, jewelry, gloves, bags, belts and hats.



THE ABOVE CARD measures 8x11 in. and is a colorful reminder that the Southern Textile Exposition is to be held in Textile Hall, Greenville, S. C., April 3 to 8 this year.

Wool Stocks Lower

Apparel wool stocks in the United States in the hands of dealers and manufacturers on Dec. 31, 1938, were about 2½% less than similar stocks as reported year previous.

Wool in the hands of manufacturers and top makers, amounting to 50,274,000 lb. scoured basis, was about 10% higher than a year ago; while wool in the hands of dealers, amounting to 65,115,000 lb., scoured basis, was about 9% less.

For Underwear Men

A series of regional meetings for members of the Underwear Institute has been arranged, and the first is being held on Feb. 15 at the Abraham Lincoln Hotel in Reading, Pa. This will be followed by similar meetings in Utica, Boston and at some convenient point in the mid-western area.

Wool Goods Better

The latter part of January brought renewed activity and generally stronger feeling in the wool fabric market. There had been a low period earlier in the month which was responsible for some pessimism. However as raw wool strengthened, buyers of goods operated more generously.

The spring situation in both men's wear and dress goods is assuming a tight aspect, as many of the more desirable lines are sold through March. On Jan. 23 the American Woolen Co. advanced prices of all Dept. 3 woolens, at 2½ to 5c. a yard.

Rayon Weaving

Reports from the associations in the rayon weaving industry indicate that activities toward the end of January in the standard fabrics group amounted to about 72% of capacity. This was a gain from approximately 64% capacity with which the month opened. Looms on twills and serges were the most actively engaged. Manufacture of faille taffetas was on the upswing.

Rayon Yarn Active

Substantial demand for rayon yarn was evidenced during January, and further opening up of markets for rayon fabrics will, it is believed, bring even more active business during February.

The knitting trade has not been so active as the weaving and close competition has resulted in the price of 150-denier oiled knitting cones settling to 45¢.

Raw Silk Higher

During January prices on the commodity exchange for raw silk contracts advanced from 2 to 10¢ per pound, the larger advance being on the nearer months. There were minor setbacks, made up in succeeding trading, and the general tone of the market was strong but not overly active.

Hosiery Hopeful

Operation in the hosiery market since prices were named early in January has been on a fair scale. As previously noted, prices on the lower ranges were unchanged, but there were small reductions on some of the higher-priced numbers. Further progress is being made in attacking the problem of good merchandising, as evidenced by new forms of labeling, new extensions of color coordination and new methods of promotion. There are also new developments in construction, such as the use of Lastex tops to full-fashioned hosiery and further developments in extremely sheer numbers.

Sweaters of Many Fabrics

Further development of combining knitted and woven fabrics in the production of sweaters lies ahead for the 1939 season. The combinations are infinite, as all sorts of woven fabrics are being tried out in combination with many different arrangements of the knitted portion. Not only is there a combination of fabrics, but also of fibers, since spun rayon, wool, cotton, etc., are being used to produce the diversified effects desired.

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Carpet Openings

The launching of the spring carpet and rug season last month met with good buyer support. Compared with a year ago, when the market was in the doldrums, business was brisk. A report from Chicago indicated a gain of 65% over last year in volume of initial business.

Wool Tops

On Feb. 4 spot wool tops on the New York market were quoted at 86¢. The slight reversal of trend began about the middle of January. Tops opened the month at 85¢, declined to 84½ on Jan. 13, regained 85¢ on Jan. 20 and as the month closed were firm.

This and That

✦ United Piece Dye Works, Lodi, N. J., has recently adopted a new process, called the Sanitized Process, to prevent the formation of perspiration odors in fabrics.

✦ Columbia University, New York, began spring session of evening textile classes Feb. 8.

✦ A method for determining the length of time required by fabrics to absorb and to evaporate moisture has been developed by United States Testing Co., Hoboken, N. J.

✦ Government methods for determining the fineness of wool by use of the cross-sectional method have recently been improved, according to a report issued recently by the Bureau of Animal Industry, U. S. Department of Agriculture.

✦ At a meeting of the New York Section of the A.A.T.C.C., held Jan. 27, Charles Simon, of Industrial By-Products & Research Corp., spoke on the labeling of consumer textiles.

Wage-Hour Plot Thickens

Decisions may be delayed until May 1, or even later

By BLAINE STUBBLEFIELD
Washington Office, TEXTILE WORLD

WAGE-HOUR committees for the textile industries are working backstage these days. The wool committee, "A-1," headed by Donald Nelson, met Jan. 23. Discussion convinced the members they needed more information. Accordingly a letter was addressed to Arthur Besse, National Assn. of Wool Manufacturers, requesting that he ask the wool manufacturing industry to supply data on (1) the competitive relationship between wool and other fibers, (2) percentage of wool mixed with other fibers in the manufacture of piece goods, (3) the probable effect of various wage rates if applied to wool manufacturing. The committee also studied data from the Bureau of Labor Statistics on the wool manufacturing wage structure.

A committee of three was appointed to confer with rug and carpet manufacturers on the best method of arriving at a minimum wage in that industry. It was resolved, however, not to recommend inclusion of rugs and carpets within the scope of the wool industry. The reason for that decision was that a whole new field of study, covering competition between fiber and other floor coverings, would be necessary and would take too much time. But rugs and carpets may be brought into the definition after the final minimum wage order is issued by Administrator Andrews, when there is more time for deliberation. Obviously, rugs and carpets must be included, must be left out of committee coverage, or must have a committee of their own. Neither of the latter two alternatives is probable.

The wool committee meets again Feb. 17, when the principal matter of its discussion will be data which will have been received from the manufacturers.

Committee "D", a sub-group under the main Textile Committee, which was appointed to study possibility of multiple worker classifications and wage rates, and to suggest final recommendations to Mr. Andrews, wants as little publicity as possible, so as to avoid unethical outside influences. The committee met on Jan. 24, and is now working as individuals in various parts of the country. Like the wool committee, committee "D" also wants more information, and is smoking it out of various sources. It will meet March 1.

The Textile Committee will meet again when "D" and the wool committee have turned in their recommendations. No date can be set as yet.

What Rate . . . and When

April 1 now seems to be the unofficial date on which the Division hopes that wage recommendations will be sent to Andrews, but, since Committee D is now scheduled to meet March 1 and further hearings may be necessary, and since the Administrator must hold hearings on the final recommendation, Washington will not be surprised if his final order is not issued until May 1 or even later.

Asked how long it might be after the Administrator gets the recommendations till the final order is issued, officials plead inability to guess. Prolonged hearings might be necessary, or they might be very short.

What will the wage rate or rates be? Certainly there will be a separate wool rate. One plausible guess is that there will be three rates in other textiles. Opinion this month has raised its forecasts of a 30c basic wage. Time has passed, and Oct. 24, 1939, the date on which the 30c rate goes on automatically, is nearer. Now you hear 32½c. more often, and few would bet their income tax money that it won't be 40c. Most doubt it, though.

Seemingly in line with the Division's feeling that learner exemptions generally are not necessary to prevent curtailment of opportunity, the application of Throwsters Research Institute for exemptions for not to exceed 5% of total employees at 70% of the minimum wage for 12 weeks, was denied.

Andrews Reports to Congress

In his first annual (interim) report to Congress, Administrator Andrews reviews (1) legal and economic coverage of the Act, (2) progress of organization of the staff up to Dec. 31, 1938, (3) outlines the administrative program for 1939, and (4) administrative problems. He refers specially to the problem

Thurmond Chatham

W. H. Cummings

John H. Halford

Moses Pendleton

Harold J. Walter

Representatives of employers on the wool industry committee

John M. Berry | J. B. Glasner | R. O. Huffman | J. Wyckoff Mettler | William Meyer

Employer members of newly-announced hosiery committee

of salaried employees receiving more than $400 per month who do not come under "executive, administrative, professional" exemptions.

Picks N. C. Mill for Court Test

Mr. Andrews has selected the Central Weaving & Spinning Corp., Fayetteville, N. C., for the first Court test of the Fair Labor Standards Act. A bill requesting a judgment enjoining the defendant was filed Jan. 27 in the Federal District Court at Fayetteville by George A. McNulty, associate general counsel of the Wage-Hour Division. The bill charged that the firm had "depressed wage standards and employed 'speed up' methods of production to such an extent that in the latter part of 1938, and in January 1939, many of the defendant's employees were paid less than 15c per hour while the earnings of weavers employed by defendant were less during such period for operating six looms than they had been for operating two looms in 1932."

Jacob A. Neider of New York, president of the corporation, expressed complete surprise at the filing of the bill, and claimed that the company had been "operated as a philanthropic enterprise" since the present management took it over in 1933. "None of the officers in that time has taken a dime out of the firm for salary or in any other way, with the exception of Max Lefkowitz, employed as resident agent," said Mr. Neider.

The concern does silk commission weaving and throwing; at last report it had 5,000 silk spindles and 236 broad box looms.

Newly Formed Hosiery Committee

The personnel of the Hosiery Industry Wage-Hour Committee will consist of the following:

Public members: Dr. George W. Taylor, Chairman of committee, University of Pennsylvania, Philadelphia; Miss Rosamond C. Cook, University of Cincinnati, Cincinnati, Ohio; Dr. John C. Evans, Albright College, Reading, Pa.; Stanley B. Hunt, *Rayon Organon*, New York, N. Y.; Capus Waynick, editor, *Enterprise*, High Point, N. C.

Employee members: Alfred Hoffman, Philadelphia; William Leader, Philadelphia; Thomas Lehmann, Milwaukee, Wis.; Emil Rieve, Philadelphia; W. Cedric Stallings, Durham, N. C. All are members of the American Federation of Hosiery Workers.

Employer members: John M. Berry, Rome Hosiery Mills, Rome Ga.; J. B. Glasner, Rockford Mitten & Hosiery Co., Rockford, Ill.; R. O. Huffman, Morganton Full-Fashioned Hosiery Co., Morganton, N. C.; John Wyckoff Mettler, Interwoven Stocking Co., New Brunswick, N. J.; William Meyer, Apex Hosiery Co., Philadelphia.

AFL Takes Gorman Back

Erring son returns to fold after split with CIO

"Come home, all is forgiven," was the theme song of the A. F. of L. last month when it welcomed back to the fold Francis J. Gorman, lately of CIO. Apparently the fact that both TWOC and UTW had put thumbs down on Gorman didn't destroy his value to AFL as a possible leader of textile labor. . . . Our Washington office reports the news on this development, below.

THE battle line that has divided organized labor these last few years will now divide labor in the textile industries. That is Washington's conclusion following American Federation of Labor's "reinvestment" of United Textile Workers after Francis Gorman's sudden rebellion and ejection from CIO's Textile Workers Organizing Committee. It will be remembered that UTW was one of the original CIO unions which were expelled from AFL. Recently the UTW's executive council reaffirmed CIO affiliation.

Both sides claim overwhelming support of the workers, and there is no way to get at the facts, if indeed the union leaders themselves could do it at this time. CIO claims the rift was personal resentment and ambition on the part of Mr. Gorman. AFL says the real cause was dictatorial rule of textile labor from New York City.

AFL plans to start with a strong nucleus of local unions which it claims are still independent, and go after TWOC conversions with an organizing force. It will not attempt to establish craft lines, but will maintain the industrial system. It will bank heavily on a Southern Cotton Textile Federation to give southern workers "democratic self-rule for the first time in history." Likewise AFL will not fail to capitalize on the South's traditional dislike of CIO.

CIO, on the other side of the scrap, will make capital of Mr. Gorman's "mutiny" at a time when an effort was being made to secure reinstatement of wage rates trimmed during the recession. It will cite manifold benefits obtained for the workers under Mr. Hillman's leadership of TWOC.

Washington observers have their hands full trying to make their quota of prophecies for the Capital, and do not like to expand out into "the States," as they call the rest of the country. But it does look from here that, when and if AFL gets its amendments to the Labor Relations Act, and if Mr. Green maintains a high standard of leadership, CIO may find itself in a close run for dues money.

Rayon Makers Cleaning House

Moratorium set on "cooperative advertising"; weavers would omit identity of yarn maker

NEGOTIATIONS current for the last six to eight weeks in the rayon fabric field have done much to clarify the "cooperative advertising" problem and may result in conclusions which will discard the bad and retain the good features of this advertising procedure. Specifically this is advertising of rayon garments or fabrics by wholesaler or retailer, in the cost of which the rayon yarn maker shares. Though there are many variations of cooperative advertising to be found through the rayon industry, it is the relationship to newspaper advertising by New York retailers which has been the principal sore spot. A moratorium has been called and many minds are at work on a set-up involving sound principles.

There are many parties at interest in this matter: rayon yarn manufacturers, gray goods mills, converters, garment makers and retailers. This succession of five handlers gives added complexity as compared with handling cooperative advertising in say the food or cosmetic fields where the primary manufacturer sells direct to the larger retailers.

The Motive is Reasonable

The rayon yarn manufacturer naturally wants to impress the consumer with the virtues of his yarn and materials made therefrom. It has not been difficult therefore for the retailer to get advertising assistance by passing his request back through the garment house, converter, gray mill to yarn maker. In fact it became so easy that, in the words of some in the primary market, it became a racket. A retailer might buy several dozen garments to sell for say $20 each and put it up to the garment house to get him advertising money from the yarn man. When it is recognized that there may be $1 worth of yarn in each $20 dress, it becomes apparent that no worthwhile advertising allowance can be passed to this retailer on any *economic* basis.

Even though the yarn maker should regard the prestige gained as balancing a clear money loss in any particular transaction, the accumulation of similar demands resulted in lack of control, planning or coordination so far as the yarn maker was concerned. Furthermore, retailers began to expect and to insist on advertising help which yarn men regarded as unreasonable, and, when denied, retailers cancelled their original orders in favor of garments from some other source which would bring such help. Then garment men cancelled on converters and converters went back to the gray mills. Validity of contracts was again an issue. The situation brought about merchandising on a hand-out standard, instead of on an honest quality standard.

As yarn makers began to withdraw what they had begun to recognize as misplaced generosity, converters saw more clearly that they would shortly be left carrying the bag. So the movement began among them to refuse to pass back requests for advertising money, or to pass forward sums for such purpose. On top of that, a group of 50 weavers of rayon gray goods, covering fancy as well as staple fabrics, resolved not to accept any further orders which specified make of yarn.

At present writing, this had not crystallized into a trade practice, and yarn men regarded it as an extreme position which would cure certain abuses but at the same time kill many benefits which distributors as a whole enjoy from properly identified and promoted materials. The weavers may easily fall back to admit the policy of telling their customers what yarns are in the various fabrics they offer, without accepting dictation from those customers to the effect that the weave construction is O.K. but that it must be made of so-and-so's yarn. Converters say they particularly want to know when synthetics of foreign origin are used.

One school of weavers wants only group advertising by synthetic yarn men to reach the consumer. This seems to some to be a bit out of step with modern ideas and methods, and particularly inapplicable to rayon since the present diversity of synthetic fibers will be multiplied appreciably during the next year or two. The identity of the maker of many of the yarns connotes their quality and characteristics to the consumer. No yarn man wants to suffer more than he has to through quality mistakes of his competitors, and he certainly wants to benefit through the good reputation of his own yarn. In other fields group advertising is often supplemented by private brand advertising and the success of rayon firms in the latter type of promotion is such as to make an observer believe it will not be lightly abandoned.

Styling Contributions

The valuable contributions by rayon yarn firms to fabric construction and styling must be recognized by gray mills generally. The promotion of new fabrics on a cooperative basis by yarn house and garment maker has been accepted in the yarn market as a sound method for launching these fabrics, and business for the gray mills in such goods is built up without burden on those mills. In this form of cooperative advertising initiative arises from the yarn maker and he retains control over his interests in the matter.

At the moment, yarn executives have expressed sympathy with the objectives of the 50 weavers who said tentatively that they would no longer accept yarn-make specification from their customers. A plan for a 2% advertising allowance by first hands on yarn contracts seems to have been abandoned—at least it would have involved infinite detail in dividing and subdividing as the yarn progressed successively through weaver, converter and cutter to retailer. Some yarn houses had already abandoned advertising handouts before the turn of the year and others have more recently stated they will do so. Some are even willing to modify or eliminate their retail promotions. The ramifications of such actions are infinite, affecting stability of price, maintenance of quality, initiative for research, etc., to lengths that can be covered equally as well, and certainly more briefly, in the imagination than on paper.

Outside of establishing markets for specific makes of yarn, the rayon manufacturer has reached out to the consumer to offer standards of quality which will bring repeat business from that quarter and relieve the product from out-and-out price competition. Now come suggestions involving fabric certification, perhaps by some central bureau.

TEXTILE PERSONALITIES

William A. Moorhead

"SOME day I am going to be president of a mill too," said a poor farm boy to himself some 40 years ago as he watched the president of the local mill ride grandly by behind a team of spanking bays. Today, William A. Moorhead, the farm boy from Pea Ridge, is head of Joanna Cotton Mills, Goldville, S. C., a position he has held for many years. Leaving the farm, he attended Furman University three years, worked a year in a department store, and then went to Atlanta. After working a few days in the Asa Candler's bank at $25 a month, his big chance came. George Wright, now president of Republic Cotton Mills, offered him $50 a month to come and work at Banna Mfg. Co., later Joanna Cotton Mills. He took the job, became president and treasurer in 1920, and has headed the mill since—his present title being agent.

Personally, Mr. Moorhead is a pleasant, soft-spoken gentleman whose interests are many and varied. One of his hobbies is "knowing folks", particularly his own employees, and often he attends parties, weddings and funerals in the village. A keen and earthy sense of humor, often reminiscent of his early days on the farm, is outstanding among his personal characteristics. He thinks the name "Pea Ridge" is the perfect title for a birthplace. And one of his chief delights today is to sneak away to the river on Saturday afternoons and swim in his "birthday suit." "One should undress to swim," he insists, "not dress!"

RATHER vaguely, William M. McLaurine told us he was born in Tennessee. When we asked him "what town," he replied, still vaguely: "Oh, you wouldn't know it." Under pressure, he admitted it was Lynnville, near Pulaski.

Mac often refers to himself as a school-teacher—and his claim is not unwarranted. He taught country school, high-school, teachers' college. During the war he went into Y. M. C. A. work at Camp Gordon in Atlanta, and was assistant camp educational director.

Subsequently he taught industrial management at Georgia Tech. That

William M. McLaurine

was where he first "attracted the attention" of mill executives, Mac says, with a twinkle in his eye. At any rate they invited him to be secretary of the Cotton Manufacturers Association of Georgia in 1924, and then in 1926 he moved on to the secretaryship of the American Cotton Manufacturers Association.

This is characteristic: When we asked him his main interest, he replied that he was interested in "things that haven't been done." And he is: in merchandising, in research, and in other zones where future possibilities are so much greater than past accomplishments.

He has three hobbies: his grand children. If you're in a hurry, don't get him started on that subject.

Mac is a remarkable combination of a realist and an idealist. He is a vigorous influence in an industry that has come to know and love him so well.

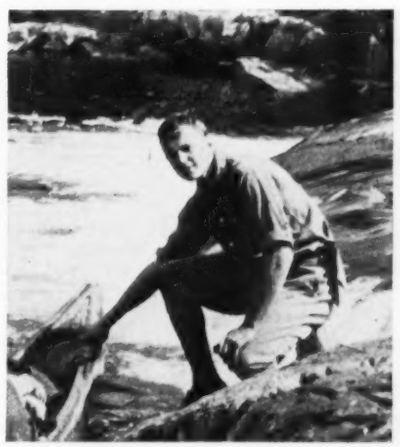
BORN in Southern India, skillful in sailing and canoeing, holder for a time of the 100-yard dash record, studied law and admitted to the Bar but not now practicing—this man so far sounds like the favored son of a British title. Add the facts that he was born of American missionary parents, that he was the mainstay of the Williams College football team and was graduated there in 1904, that he received his law degree from Harvard Law School, and you have the earlier background of Herbert Gutterson, president of the Institute of Carpet Manufacturers of America.

The war period brought him in close association with Herbert Hoover, first in the U. S. Food Administration at Washington as executive head of the Division of Coordination of Purchases and later in Europe where he was member of an Allied Commission organized to distribute food in central and eastern European countries.

In 1928 he served as executive secretary of the Republican National Committee at Washington.

Mr. Gutterson entered the textile field as president of the carpet group in 1931.

For relaxation Mr. Gutterson still prefers the more violent games of hand ball and tennis. His personal friends say that if not in the house he can usually be found chopping wood or tinkering with anything that can be done outdoors.



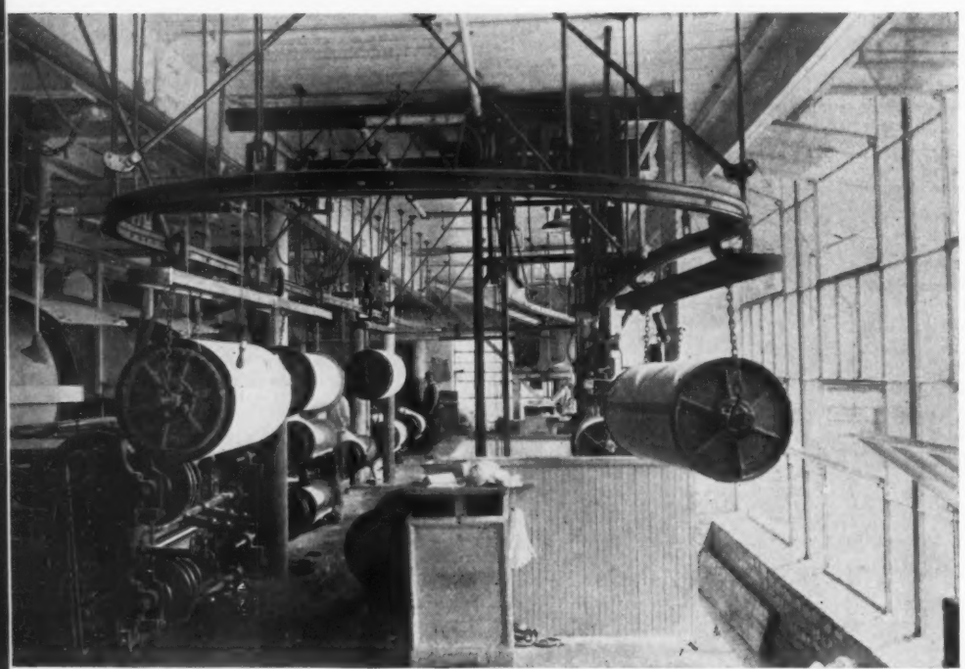
Herbert Gutterson

Materials Handling

Installations which have solved problems in four textile mills

By CURRAN F. EASLEY *and* R. B. BETTS
American Monorail Co. *Chief Engineer, Eagle & Phenix Mills*

DURING recent years wide separation of departments, due to expansion programs; rearrangement or crowding of machinery, incidental to trends toward larger packages; and higher labor costs and shorter hours have complicated the materials-handling problem in textile mills. A number of mills have solved their difficulties by installation of overhead handling equipment. Installations of such equipment include those for handling boxes of roving from the card room to the spinning room; yarn from the spinning frames to the twisters, winders, and spoolers; section beams in the slasher room; warp beams from the slashers to the warp storage and tying-in room; warps throughout the weave room; cloth rolls from the cloth room to the warehouse; stock in the dyehouse. Some installations are manually operated, while others are fully automatic with applications of electrical controls for loading and unloading, hoisting and lowering, dispatching and stopping carriers. Below are described several typical installations.

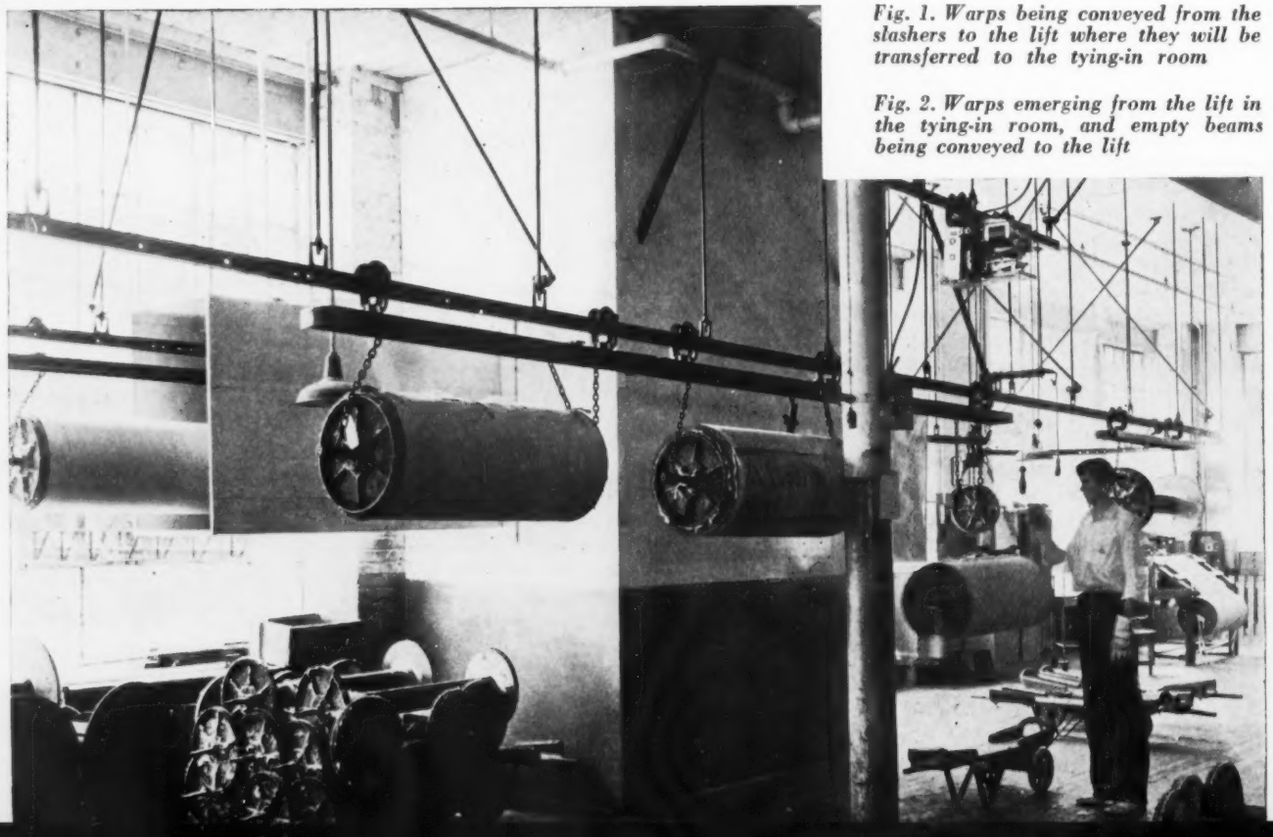


Handling Preparatory Stock

In one mill, due to an expansion program, the card room and spinning room are located in different buildings, separated by a street. The spinning room floor is about 6 ft. higher than the card room floor, and the two rooms are connected by a covered passageway. Floor-trucking up and down this grade was extremely difficult. To obviate this difficulty, an electric monorail was installed in the passageway, with short extensions leading to both the card and the spinning rooms.

Fig. 1. Warps being conveyed from the slashers to the lift where they will be transferred to the tying-in room

Fig. 2. Warps emerging from the lift in the tying-in room, and empty beams being conveyed to the lift



A train of three trolleys equipped with a tractor unit for propelling the load up and down grade operates on the monorail. The tractor, which is controlled by electric pushbuttons, consists principally of an electric motor and gear reducer which drives a pneumatic tire held in contact with the bottom of the rail. Traction is obtained through pressure of the tire against the rail. The tractor is provided with an operator's platform which has about a 6-in. clearance above the floor. The trolleys are equipped to engage with the trucks; and, as they move away from the point of loading or unloading, the trucks are lifted a few inches clear of the floor by a change in grade of the monorail and remain suspended in this position during transit.

Warp Conveying

Automatic handling equipment was installed in a mill which had been conveying 400 warps per day from the slasher room on the second floor to the tying-in room on the first floor by means of manually operated floor trucks and a freight elevator. The carriers are four-wheel trolleys equipped with chains and load hooks, on which the warps are suspended by their gudgeons.

Equipment consists essentially of a broken loop of monorail on each floor, the missing links of which are load members of independent monorail lifts operating from floor to floor (see Figs. 1 and 2). One lift conveys the warps to the tying-in room, while the other returns the empty beams to the slasher room. To provide self-loading and automatic operation of the lifts, the rail in each loop, as well as that of the lifts themselves, is slightly graded. Thus, the carriers, unless held in place by stops, are free to travel around each loop toward the feed-on end of the lifts.

Operation of the "down" lift is as follows: An additional line of monorail is installed directly over the front of the slashers; electric hoists are mounted thereon for doffing the slashers and for transferring warps to the carriers. Stops are provided at the loading points to hold the carriers stationary while being loaded. After a carrier is loaded, it is released to travel around the loop to the feed-on end of the lift, where it immediately enters the lift or awaits the return of the lift from the first floor. This lift, in its upper position, interlocks with the monorail loop and thus allows the carrier to pass directly from the loop to the lift. The action of the carrier passing onto the lift operates a stop which prevents the next carrier in line from going forward and, at the same time, sets in motion the lift mechanism. The lift mechanism lowers the carrier to the first floor, where the lift engages the monorail loop and allows the carrier to pass off the lift section automatically. After this, the lift section returns to the upper floor for the next load. Action of the "up" lift is exactly the reverse.

Narrow Warp Alleys

A certain large group of mills installed loom beams with large-diameter heads in the weave rooms. The resultant narrowing of the warp alleys made it extremely difficult to move loaded dollies through some alleys and impossible through others. As a solution to the problem, a system of light overhead monorail cranes was installed. As looms in some of the weave rooms were belt driven from either above or below, while others were individually motor driven, two different types of cranes were required.

In rooms where there were no belts to interfere, a single crane bridge spanning each bay and traveling on a runway extending the full length of the room was erected. Thus the load can be moved longitudinally down the bay on the crane runway and laterally across the bay on the crane bridge. See Fig. 3. In rooms where belts prevented such an arrangement, cranes short enough to pass between belts from two lines of shafting were installed. These cranes were equipped with extensions which allowed them to serve three or four lines of looms. Other lines of looms were served by single lines of monorail over each warp alley.

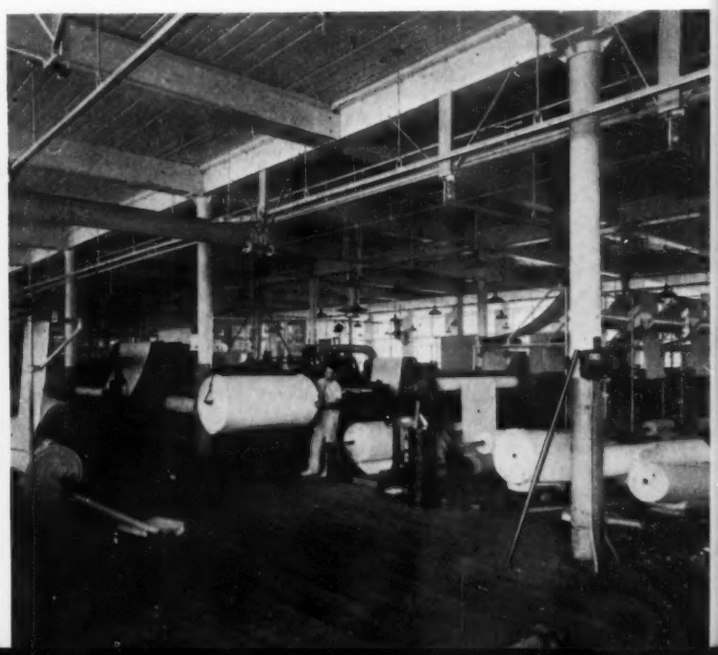
Transferring Finished Stock

Handling rolls of cloth throughout the cloth room involves a great deal of manual labor which can be eliminated by installation of a simple overhead handling system. Such a system may consist of single lines of monorail connected by switches and curves, or of a wide-area service crane, or of a combination of both. Electrification of the system allows the use of electric hoists; but, as the loads found here are generally light in weight (100 to 1,000 lb.) and as the actual heights that these loads are lifted is small, the use of hand chain hoists is usually satisfactory.

In the cloth-room installation illustrated in Fig. 4, a light interlocking-type crane and runways have been provided to serve a large group of inspecting machines, while lines of single rail are used over the brushes, shears, and other individual machines. All of these lines of single rail are at the level of the crane and are provided with latches for interlocking with the crane bridge in its movement along the runway. Once the load has been picked up by the trolley hoist, it can be moved throughout the entire system without having to be released.

Fig. 3. (Left) Every loom in an extensive area can be reached by this overhead crane

Fig. 4. (Right) Heavy rolls in the clothroom are handled efficiently by overhead cranes



Hosiery Men Attack Problems

Vote decisively against third shift, get economic and labor advice at annual conference

AT the third annual hosiery industry conference, held in New York, Jan. 18 and 19, it was made clear that labor relations and merchandising hold the most crucial problems for the hosiery manufacturer during the coming year.

Earl Constantine, president of the National Association of Hosiery Manufacturers, presided. The meeting was under the auspices not only of that association, but also of the Full-Fashioned Hosiery Manufacturers of America, the Southern Hosiery Manufacturers Association and the Woolen Hosiery Institute of America.

There were two outside speakers—Dr. George W. Taylor, University of Pennsylvania, who gave an enlightening analysis of economic developments in the hosiery industry and John C. Gall, counsel for the National Association of Manufacturers who spoke on the rights and prohibitions which apply to employers under the Wagner Act.

Austin H. Carr, president, Durham Hosiery Mills, and chairman of the board of the N.A.H.M., spoke briefly in opening the conference and executives of the sponsoring associations summarized the work in their respective fields.

Association Achievements

Joseph Haines, Jr., of the full-fashioned group, stressed "labor policy and profit objective," pointing out that the only section of the industry which practices a clearly defined, organized and publicly stated labor policy is that comprising the mills which operate under the National Agreement and Uniform Wage Scale. Mr. Haines added that at the last negotiation the uniform wage scale was dropped most reluctantly, against manufacturers' better judgment, and he hoped only temporarily; adding that the rest of the industry must be properly responsive to and support, not undermine, a constructive labor policy. He stressed that chief obstacles to profitable operations arose in the selling end of the business; authentic price information should be more widely disseminated; buyers' obligations in a contract should be properly fulfilled; there should be collective action on sound commercial principles. He urged cooperation between branded, unbranded, greige goods and commission knitters; plans with a profit objective must comprehend the merchandising methods and markets of these four groups.

Earl Constantine summarized the current activities of his association:

1. Establishment of a merchandising division.
2. Effort to gain custom-made labeling rules for hosiery and to obviate the industry's being governed by a number of fiber identification rules drawn up for woven goods and a misfit when applied to hosiery.
3. Wage-hour law cooperation.
4. Reciprocal trade agreements watched and opposed where harmful to hosiery.
5. Opposed Government setting up hosiery plants in Farm Homestead areas.
6. Prepared and distributed six letters on cost accounting principles.
7. Setting up standard methods for testing hosiery.
8. Further improvement of statistical service.

Taylor Durham, reporting for the Southern Hosiery Manufacturers Association, said that the one outstanding thing of the last 12 months was keeping the industry informed on things not to do and the latitudes under the various new laws. Although the rayon labeling rules are the law until the hosiery rules are in existence, he believed that money had been saved by knowing what can reasonably be ignored. "We have also prevented our members," he said, "from obligating themselves under the broad warranty lately asked by the chain stores."

Overwhelmingly Against 3rd Shift

On a resolution introduced by J. H. Brine of Rollins Hosiery Mills and seconded by K. R. Seelaus of Concordia Silk Hosiery Co., the convention voted 86 to 5 against third-shift operation. Twenty-four hour operation accelerates rate of deterioration of machinery, said Mr. Constantine, and some mills have tried third-shift operation and abandoned it because too costly. It has been hoped that a penalty may be set on the "graveyard shift" under the Wage-Hour law.

John M. Botts, of Harrington & Waring, said, "I only hope my worst competitor would run three shifts as the penalty is in itself." John M. Berry, of Rome Hosiery Mills, spoke emphatically against the practice stating that the third shift is "blood money."

Earl Constantine gave the records on new mills in the two years of 1937 and 1938. On Jan. 1, 1937, there were 835 plants in the industry and on Jan. 1, 1939, 910 plants. In that period 170 started up and 95 closed down. The full-fashioned branch rose from 350 to 396 plants, and the seamless from 485 to 514. In the two years, northern full-fashioned plants dropped from 263 to 256; while the southern expanded from 87 to 140.

Touching on new yarns, Mr. Constantine expressed the hope that certain of these would not be too good as that would have an effect on the industry's turnover. He added his opinion that there will be need for new and unusual equipment, but he recommended not spending too much time on the matter till the yarns were commercially available.

Dr. Taylor Illuminating and Hopeful

Dr. George Taylor, University of Pennsylvania, and long associated with the industry, gave an illuminating analysis of economic developments in the hosiery industry. His outlook is essentially hopeful. He said, "While the years to come have numerous inherited characteristics from the spree of the 20's and the long hangover of the 30's, the industry has opportunities ahead that give reason for more optimism than could reasonably be invoked for many years. Of primary importance is the closeness of wages and labor costs between various producing areas, and the very real possibility that there will be no recurrence of wide district differentials. The industry has also started to rehabilitate its equipment with more productive equipment, so that low labor costs will not be so greatly dependent upon low wages. . . . For mills that are well-equipped and efficiently operated, and which have a sound merchandising program, the 40's should be a decade of good business and of good profits."

He analyzed the legacies of recent decades. Before 1919 he called "prehistoric"; 1919-1929 he called the Glamour Decade; 1929-1939 the Hectic Decade; 1939-1949, the Stable Decade—with a question mark. The Golden Age showed a staggering rise in the full-fashioned industry. Workers made $5,000 to $8,000 per year. Dollar retail hosiery sold for $8 to $9 per dozen against today's $6.50 to $7.25. This decade left three definite legacies:

1. Industry got production-minded

to the virtual exclusion of merchandising ability.

2. Operating inefficiencies were accepted because at that time they did not hinder profits.

3. Labor problems, that started with the lifting of labor standards to such a point that there was a long way to come down, were continued under pressure of a rather steady relocation of the industry.

The Hectic Decade (1929-1939) saw a steady decline of prices, profits and wages, and gave significant contributions to the future hosiery industry:

1. The growth of a gray goods market; when merchandising problems loomed, management that knew only production must find some way to move their product. It is the greatest element of weakness that has come into the market. Its production is tuned to an intermediate speculative market instead of to the needs of the consumer.

2. Over-capacity increased as deflation progressed. As margins lessened, the search for lower cost individual plants became a necessity. It is likely that full-fashioned production will be predominantly a southern industry before the next decade has run its course. There has been an epidemic of starting new mills with the oldest machinery, and time is ripe for mills and machinery builders to realize their responsibility for a program for retirement of doomed machines.

3. An asset from the depression—the cooperative activities of the industry.

Relations with Labor under NLRA

In introducing John C. Gall, counsel of National Association of Manufacturers, Mr. Constantine said that the Wagner Act must be made bilateral not uni-lateral. Mr. Gall said there is nothing in the act which says the employer *can* do anything—for this you have to go back to Constitutional rights. To consider what the employer *can't* do, there are thousands of cases (12,600 handled by the NLRB in 1937 alone). The employer's basic rights of freedom of speech, freedom to deal with his employees, to manage his business, to employ, promote, lay-off, discharge, freedom of contract and right to a fair trial, these still exist, but inroads have been made on them. The employees have the right to organize and to bargain. The Supreme Court has upheld the act in all major cases, says that it affords due process of law, that the employer still has freedom of speech, that the act does not compel any one to enter into a contract, that uni-lateral character is not ground for invalidation. The Board may determine the appropriate unit for bargaining, the employer having no rights on that matter. The Board may hold an election, in which the employer has no rights. The duty of the employer, says the court, is to meet duly credited representatives in good faith to reach an agreement; it does not say an agreement must be reached, nor, if reached, that it must be put in writing.

Mr. Gall listed 20 or more practices which the Board has held as unfair labor practice ranging from a Christmas bonus to all "loyal" employees to threat to close plant or liquidate. In the discussion it was

Earl Constantine, who presided at third annual hosiery industry conference.

stressed that the employer's "state of mind" determines whether his acts are legal.

Mr. Gall recommended that:

1. Since the job of dealing with labor is as important as production or sales policies, individual plants make sure that the men who hire and fire have judgment, discretion and tact.

2. Mills keep adequate records to answer union claims. If a man has been warned by his foreman for lateness, drunkenness, smoking or what-not, keep a book record of it.

3. Consider carefully anything that changes your labor situation. Balance as between union and non-union men in lay-off or discharge.

Mr. Constantine in considering the Wage-Hour Law pointed out that the industry had asked for the highest learner minimum so far requested, but that action will be delayed until the skilled-worker minimum has been set, probably not sooner than April 1. "We hope for different minima for seamless and for full-fashioned," he said. The latter cannot hope for less than 37½¢, and might well take the Act's highest 40¢ rate and have the operation over with. The industry is hopeful of getting a tolerance of 60 to 90 days after the rate is set before it is effective.

Hosiery Labeling Rules in Sight

The final session dealt with fiber identification rules and the recommendations of the National Association's Merchandising Division. Earl Constantine reported on the former, telling of the cumbersome application of the silk and rayon rules and the opposition to the proposed wool rules. The FTC has before it the Hosiery Marking Rules, which when promulgated will supplant any others. The industry wants to bring back the identification of irregulars and seconds as required under NRA, as this improves the market for firsts. The responsibility for marking rests on the manufacturer who completes the final process, and the independent finishers are therefore included in the industry. Mr. Constantine stressed the frank and friendly relationship enjoyed by the hosiery industry with the FTC.

Merchandising Practices

Edward Jamison of James Jamison & Co., chairman of the Merchandise Division, read the report on practices relative to terms and open orders based on questionnaires returned from 225 mills estimated to represent 65 to 75% of the industry's production. The conference then approved the following recommendations:

1. As the preponderating practice of the industry is to limit terms to 30 days or less, it is deemed timely and desirable that those mills which offer longer terms should make their policies conform with the stated general practice.

2. It is fundamentally sound and desirable that in cases of deviation from regular terms, appropriate price adjustments should be made. Companies which do not now make such adjustments are urged to adopt the policy of adjustment which prevails generally in most mills.

3. To confine the acceptance of open orders (report showed that 72% of mills accepted open orders) to those customers whose performance to date on open orders has been satisfactory. It is further recommended that open orders be confirmed; that a definite expiration date be required; that fixed or approximate delivery schedules be agreed upon, and that fixed or approximate knitting details be scheduled.

The practices left for further consideration by the committee included definition of e.o.m. terms and extra dating on shipments to West Coast.

John Wyckoff Mettler sounded a note of warning on the general outlook by stating his belief that business was still on the long decline that started in 1929, and that the current upturn may touch its peak this spring. "Do not be misled," he said, "into building up inventories or plant, or freezing assets that may be needed later."

Labor Turnover

Can be reduced by proper foreman training

By CHARLES VAN DE PUTTE

LABOR turnover is directly parallel to plant efficiency, and can often be studied advantageously in an effort to remedy certain unsatisfactory conditions. Probably the best method of investigation is to break separations down into three general classifications for analysis: (1) lay-offs due to economic conditions, over which the foreman or personnel manager has no control; (2) discharges; (3) "quits." This last named classification, where an employee voluntarily leaves his job, is the one in which management should be primarily interested.

Analysis of Separations

As can be seen from Chart I*, 44% of the total separations in the textile industry for 1930 were among employees whose term of employment in a single mill was six months or less. Of this number, 56.4% were "quits"—which can only mean that somewhere management was not functioning properly with reference to its personnel problems. Employees do not ordinarily stop work just for the pleasure of moving around. Going further, it is learned that the average rate of turnover for the last eight years was 54.98 separations per 100 employees on the payroll, or the equivalent of a complete new set of help in the mills every 21.85 months. Chief reasons for separations in the cotton-manufacturing industry are shown in Chart II, and the same in more detail from the records of a southern rayon mill in Chart III.

Naturally, it follows that there are some separations which can not be avoided. For example, little can be done with regard to employees who leave an organization because of health or for family reasons. Likewise, a few persons seem to be misfits wherever they are placed and are chronically dissatisfied. There are others who have actually outgrown the organization in that there are no openings for better jobs and none in view.

The apparent or immediate cause of a separation is seldom the fundamental cause. The actual cause usually dates back to the time the employee first joined the organization. Therefore, to strike at labor turnover in an intelligent manner, the fundamental cause of each separation must be attacked.

* Cotton Industry Statistics, U. S. Labor Department.

Ignoring layoffs, over which the employer may not have full control, there are five fundamental reasons for separations:

1. Poor selection, including (a) wanderers, (b) misfits, or (c) unhealthy.
2. Misplacement of applicant according to (a) personality, (b) interest, (c) intelligence, (d) knowledge, or (e) special abilities.
3. Lack of incentive, such as (a) promotion, (b) monetary reward, or (c) commendation.
4. Mismanagement or misjudgment on part of foremen.
5. Unavoidable factors, such as (a) breakdown in health, (b) family reasons, (c) offer of better job.

Labor turnover is expensive, regardless of whether or not it is the policy of a mill to hire trained or untrained help. In a certain mill, where it is estimated that it costs from $50 to $200 to convert a green employee into a competent worker, it was ascertained that 31.2% of the total separations were trained in that mill. At a minimum cost of $50 per employee, this mill is spending $2,870 annually training workers who remain with the organization only a short length of time. In fact, 46.3% of the separations took place within six months or less after employment. In addition to the sum expended training completely unskilled workers, even so-called "experienced" help from outside must go through a "breaking-in" period which costs money. Incidentally, as high as the percentage turnover is in this particular mill, it is only about one-third the average rate for the cotton-textile industry during the last eight years.

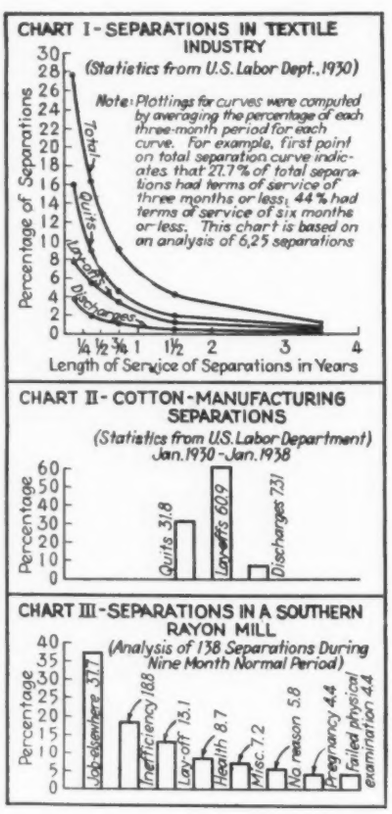


CHART I - SEPARATIONS IN TEXTILE INDUSTRY
(Statistics from U.S. Labor Dept., 1930)
Note: Plottings for curves were computed by averaging the percentage of each three-month period for each curve. For example, first point on total separation curve indicates that 27.7% of total separations had terms of service of three months or less; 44% had terms of service of six months or less. This chart is based on an analysis of 6,25 separations
Percentage of Separations
Total
Quits
Layoffs
Discharges
¼ ½ ¾ 1 1½ 2 3 4
Length of Service of Separations in Years
CHART II - COTTON-MANUFACTURING SEPARATIONS
(Statistics from U.S. Labor Department)
Jan. 1930 - Jan. 1938
Percentage
Quits 31.8
Layoffs 60.9
Discharges 7.31
CHART III - SEPARATIONS IN A SOUTHERN RAYON MILL
(Analysis of 138 Separations During Nine Month Normal Period)
Percentage
Job-elsewhere 31.7
Inefficiency 18.8
Layoff 13.1
Health 8.7
Misc. 7.2
No reason 5.8
Pregnancy 4.4
Failed physical examination 4.4

In arriving at an estimate of the cost of training new employees, everything which tends to increase the ultimate cost per unit of production must be considered. Some of the more important items include decrease in the value of finished goods through increased seconds, increased total waste, cost of reworking re-workable waste, additional wear and tear on machines, decreased production, wages paid in excess of actual work accomplished, time taken from other workers, etc.

Scientifically managed personnel departments would undoubtedly help reduce labor turnover in many instances. It is interesting to note that, according to the Bureau of Labor Statistics (*Monthly Labor Review*, June, 1936), only 7.7% of the 181 cotton mills reporting, have employment departments, and that "in nearly two-thirds of these the foreman was either entirely responsible for the hiring of workers or he had charge of it under the general supervision of the superintendent or manager."

The Foreman's Function

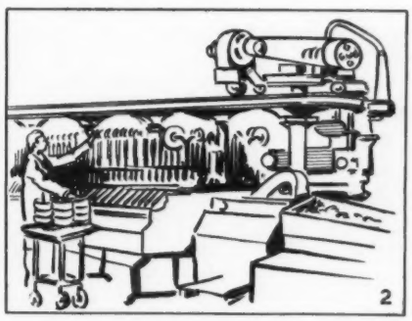
Many students of labor problems believe that an initial point of misunderstanding between management and labor lies in the relations between foremen and workers. Foremen are the "in-between men" on which both factors depend for the proper explanation and interpretation of ideas, policies, and actions. Unfortunately, a large percentage of the meaning and force of policies from above is lost in coming down to the workers; and, likewise, suggestions from the workers are often distorted or weakened in the process of being transmitted upwards. A systematic method of training foremen in accordance with best practices of personnel management would, in the opinion of the writer, go a long way toward reducing labor turnover and improving employee relations in a plant.

Adventures in Spooling Spun Rayon

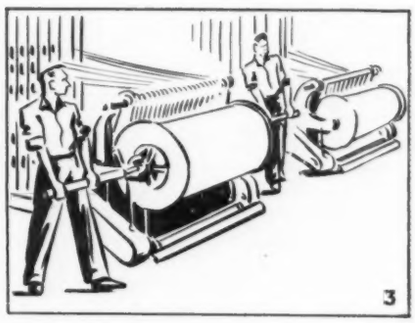
With a happy ending

By THOMAS A. HUBBARD

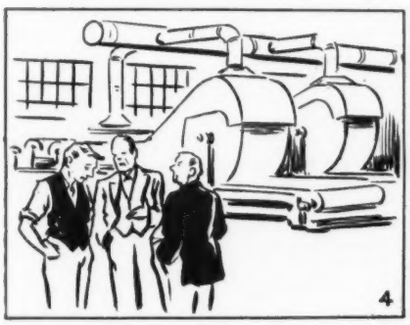
ONCE I had an easy job. I was in charge of a spooler room, with nothing to run except standard 30s cotton. There never was any trouble. And then the mill began to use rayon staple. When they rolled the first doff box of spun rayon yarn up to the spooler, I approached it with the innocence of a baby. We changed the cheese cores and started the traveler of our automatic spooler.



THE TRAVELER made a complete round of the spooler, but not one end did the knotter tie. The hook shear was cutting the yarn on the clamping side. We overcame this by rounding off the top edge of the hook-shear back plate. Slowing down the spooler reduced sloughing off, but not enough; so bobbins were given more taper, and the spun rayon spooled almost as well as cotton.



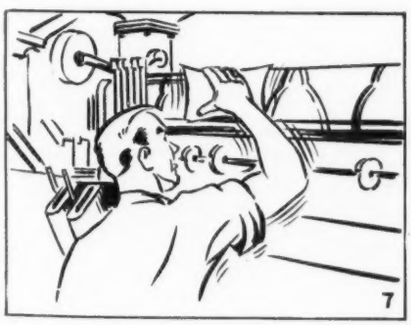
BUT TO SAVE our lives we could not get more than one beam off the warper in a day, because of frequent end breakage. Like a flash it came to me that something was cutting the yarn before it reached the warpers. Accordingly, with crocus cloth I polished carefully and to a mirror-like sheen, every point where the running rayon touches the spooler travelers.



THE SLASHER foreman and the weave room overseer continued to yell their heads off over my bad work. Meantime the carding and spinning had improved, which helped me, and day by day I was showing a very small gain in production. However, the warpers were still stopping too frequently, there were still occasional break-outs in weaving. So I went back to work on the warpers.

TO ADD TO my worries there was a small, but growing mountain of yarn waiting to be spooled. The spare floor was piled full of yarn. The spoolers could not spool it, for lack of empty cheeses. I felt the need of a long vacation—the farther away the better. Every morning I came to work hoping that during the night some miracle had happened to make the yarn run better.

I PUT about a hundred dollars worth of new parts on the warper—clutch plates, clutch pins, drop wires, and so on. I tried every degree of relative humidity from the wettest to the driest. I was working like fury, but nothing I did seemed to get to the bottom of the trouble. Something was cutting or weakening the yarn, and I knew it. That much was obvious, but what?



I DECIDED to go back over the spoolers. I felt every place on the travelers which was touched by the yarn. Then I stopped each spooler and went over every inch of the drums, sanded every little rough place, and polished the drums with crocus cloth. This cut down the running time of a beam by at least an hour. I felt that I was beginning to make a little progress.

SUDDENLY, like light out of the darkness, it dawned on me that the yarn might be damaged by the detectors and grid bars. A good many had grooves cut in them. I turned the grid bars about a quarter of a turn, or until a smooth side was next to the yarn. Then I smoothed and polished the detectors with emery cloth and crocus cloth. This took about all of my spare time for a week.

AGAIN I have an easy job. The trouble is over, and our warpers are really going to town on spun rayon. The running time for a 4,000-yd. beam was cut from 6 to 8 hr. to less than 2 hr. This experience taught me two things about spun rayon—to run well in the spooler room, it must be properly carded and spun, and the spoolers and warpers must be in A-1 condition.

Finishing Yarn-Dyed Fabrics

Boiling-out and bleaching shirtings having colored-yarn effects

By C. NORRIS RABOLD
Union Bleachery

In recent years there has been a considerable increase in the volume and types of colored-yarn fabrics sent to finishing plants for processing. These fabrics can be grouped roughly as shirting and underwear fabrics; upholstery cloths; men's and women's suitings; and hopsackings, including ratines, osnaburgs, etc. This—the first of a short series of articles—deals with the bleaching of colored-yarn shirtings. Subsequent articles will discuss the dyeing and finishing of these materials and will take up the processing of other classes of colored-yarn fabrics.

COLORED-YARN shirtings fall into three general groups: (1) fabrics in which the pattern is made up of heavily dyed yarns against a background of lighter dyed yarns, the weave being such as to bring out the design in relief; (2) fabrics woven with a mixture of gray and dyed yarns, so that in the finished goods the pattern will stand out either against the white or tinted background; and (3) fabrics in which small bits of colored yarn appear at regular intervals; when this colored yarn is used only in the filling and is twisted in with the ordinary gray filling yarns, it can be so woven as to produce a flake or slub effect.

The majority of shirtings are woven in standard broadcloth constructions; namely, 37 in., 100 x 60, 4.10 yd.; and 37 in., 80 x 60, 5.00 yd. However, in colored-yarn fabrics, particularly those having ground shades, the writer has observed such constructions as the following:

37 in.	136 x 60	4.00 yd.
37 in.	128 x 52	4.15 yd.
37 in.	120 x 60	4.10 yd.
37 in.	100 x 64	4.60 yd.
37 in.	104 x 60	4.75 yd.
37 in.	96 x 60	4.40 yd.
37 in.	90 x 60	4.32 yd.
38 in.	80 x 72	5.05 yd.
38 in.	76 x 72	4.75 yd.

There are, of course, a number of other constructions and many novelty weaves containing colored yarns.

The yarns are usually dyed with vat colors, although occasionally the pattern may contain a color or colors other than vats. When colored-yarn shirtings are received by the finishing plant, one of the first things to be done is to have samples of the goods tested in the laboratory to determine the type of color with which the yarns were dyed and to subject the samples to treatments duplicating those which the goods will receive when they are processed in the plant. In some cases, it may be found that the method of processing as originally outlined cannot be satisfactorily carried out, due either to the nature of the colors in the yarns, the weave of the fabric, or some other reason. It then falls upon the laboratory to devise a procedure for processing the goods so that the same end-result can be obtained, but by a different method than that originally outlined.

In the finishing plant shirtings are singed, bleached, and subjected to various finishing operations. They may be starched, framed, and calendered; they may be Sanforized or pre-shrunk by some other process. After bleaching, they may be dyed.

The bleaching processes for shirtings are as follows: (1) singeing, (2) brown-souring or desizing with enzymes, (3) washing, (4) boiling in open kier or other equipment, (5) mercerizing (seldom required on colored yarns), and (6) bleaching with peroxide or chemic.

Certain vat colors may have their shades materially altered by means of the bleach, either in depth or in cast, while some of them do not stand up well under mercerizing when this is required, their shade being weakened by the strong caustic. Some vat colors can be classified as "soft" colors, especially when dyed in heavy shades, and these are particularly prone to mark off or bleed. As processing in the bleach house is carried out in rope form after the goods leave the singer, it is advisable to determine whether or not the colors will mark-off. Marking-off of any color produces a stain which is difficult to remove without causing bleeding or the altering of the shade of the dyed yarns themselves. It is also necessary to determine the effects of either a chemic or peroxide bleach treatment on the various colors in the pattern, as some colors may have their shade materially altered by means of a chemic bleach, while they remain relatively unaffected or have their shade changed to another cast when subjected to a peroxide bleach.

The writer recalls in particular, a certain vat blue making up the background in a pattern which was given a chemic bleach. This bleach threw the shade of the blue considerably to the green side, rendering the entire pattern dull and lifeless. With peroxide bleaching the blue was changed to a redder cast, making the entire effect far brighter and livelier.

While most vat colors remain relatively unchanged in depth of shade when they are bleached, there are some which are sensitive to the action of oxidizing agents and may have their shade materially weakened. It is advisable to determine if such colors are present in the pattern, so that the time and the strength of the bleach can be adjusted to prevent the colors from being affected too severely.

Open Boil Recommended

After the goods have been singed and brown-soured, or singed and given an enzyme treatment to solubilize the warp sizing starches, they are washed into a kier and given an open boil to remove the natural waxes and pectins and other impurities from the fabric. When the quantity of goods is too small to make a kier load or for other reasons, such as construction of goods or type of color in the pattern, the fabrics can be scoured or bleached in open kettles or in a dolly washer or similar machine, where they are kept in constant movement during these operations. In either case, the chemicals employed for the boil are usually soda ash or some other mild alkaline scouring agent, in combination with soap, sulphonated oil, or sulphated fatty alcohol. Various proprietary compounds are available for use in scouring or boiling out colored-yarn fabrics.

Boiling out of the goods under pressure or with caustic soda as the alkali is not recommended. Caustic soda solutions have a reducing and solubilizing effect on many vat colors, and this effect is more pronounced at the pressures employed in kier boiling fabrics which do not contain

colored yarns. Even the milder alkaline scouring agents are likely to have a solubilizing effect if employed under pressure. The time required for boiling-out and the temperature and concentration of the scouring solution vary from plant to plant, depending on the nature of the goods and colors, type of equipment used, etc.

To prevent reduction of vat-dyed yarns and consequent bleeding of the color into the undyed parts of the fabric during the kier boil, some bleachers add a small amount of sodium meta-nitrobenzene sulphonate to the scouring solution. This chemical, which is available under various trade names, acts as a protective oxidizing agent. That is, the chemical itself is easily reduced, and the reducing action of the scouring solution seems to be expended on the protective oxidizing agent, rather than on the dyed yarns.

If the goods are peroxide bleached, either in the kier or kettle, this treatment follows immediately after the preliminary boil-out and wash. The peroxide bleach is usually carried out with the addition of sodium silicate and a detergent which acts as a protective colloid. The sodium silicate buffers the hydrogen peroxide solution and prevents too fast a liberation of oxygen; the protective colloid appears to prevent over-oxidation of the fiber. Here again, the quantities of these chemicals, the time of bleach, and the temperatures employed vary, depending upon the goods.

The chemic bleaching process is usually carried out by giving the goods a continuous run through sodium hypochlorite so that the fabric remains exposed to the oxidizing action of the bleaching agent for only a relatively short period of time. If a cold chemic bleach is employed, and the goods are piled in a bin, the time which they remain in the bin should be kept to a minimum and the quantity of chemic controlled carefully. After bleaching with chemic, the goods are white-soured or anti-chlored and put into white bins ready for the next step in their processing. Between each treatment a wash through a rope soaper is necessary, as in the case of fabrics which do not contain colored yarns.

If the chemic treatment gives the dyed yarns the wrong cast, it may be possible to spring them back to their original shades by a treatment in a dilute solution of sodium hydrosulphite. Treatment for a short time at 160° F. in a solution containing 3 to 4 lb. of sodium hydrosulphite in 200 gal. of water usually will restore the original shade. The goods can be treated through a squeezer in the bleach house while in the rope form or, after drying, on an open-width continuous machine. The hydrosulphite must immediately be washed out; otherwise it will continue to act on the colors and may so reduce them as to cause them to run or bleed.

The formulas given in the accompanying table will serve as guides in bleaching yarn-dyed shirtings, but will need to be modified for different fabrics, dyes, and finishing-plant conditions. For example, in bleaching solid-ground shirtings, one can reduce the time of either the peroxide or chemic bleach, as well as the quantity of chemicals. This is due to the fact that there is so much color in the pattern it is usually sufficient to carry the bleach only to the point where the motes are removed or so softened that they can be washed off. A light bleach will whiten the undyed yarns. Again, on shirtings, such as pin-stripe effects, where there is a large quantity of white ground, the bleach must either be carried along for a longer time, or with a higher concentration of the bleaching agent, in order to produce a good white in the finished goods. Also, in the bleaching of those patterns which are to be tinted, it is necessary to produce a good bottom and a level bleach; otherwise the color will take unevenly.

It is advisable in the processing of colored-yarn fabrics to avoid letting the goods lie in a pile while they are in a wet state. This is especially true while they are moving through the bleach house in rope form. If they are piled in bins for any reason, considerable pressure is placed on the bottom of the pile, and marking-off may occur—a defect which is difficult to correct.

Upon completion of the bleaching process the goods are usually pulled through a water mangle and over drying ranges and are then ready for the next operation. When it happens some of the "soft" colors are present, or the pattern contains yarns dyed in very deep shades, it is inadvisable to pull the goods through water mangles, as the colors are likely first to mark-off on the water-mangle bowls or the cans and then mark-off from these on to the cloth. Such fabrics are scutched open directly from the white pits and dried without water-mangling. After drying, shirtings to be dyed are now ready to be sent to the dyehouse. Fabrics which are not to be dyed are ready to be passed along to the finisher.

(The next article in this series will discuss the dyeing and finishing of colored-yarn shirtings.)

Typical formulas used in bleaching colored-yarn shirtings

Brown Sour
1 to 2° Tw. sulphuric acid
Steep 6 to 12 hr.

Enzyme Treatment
0.25 to 2.0% enzyme solution
125 to 140° F.
8 to 12 hr.

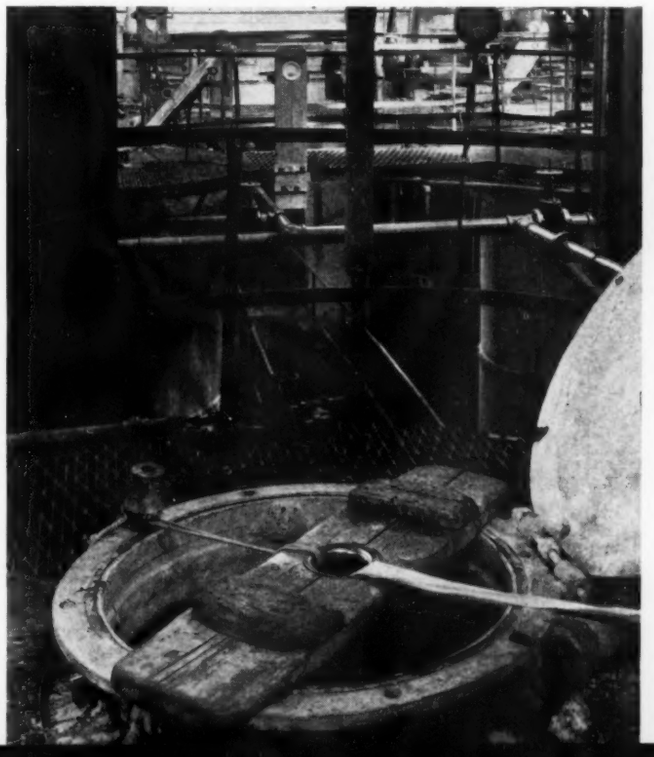
Open Boil (for 8-ton kier)
200 lb. soda ash; 50 lb. soap
180° F.
6 to 12 hr.

Peroxide Bleach
40 to 60 lb. hydrogen peroxide (100 vol.)
3 gal. sodium silicate
Small quantity of a protective colloid (sulphated alcohol, soap, sulphonated oil, etc.)
10 to 12 hr.

Continuous Chemic Bleach
0.5 to 1.0° Tw. chemic
100 to 120° F.
½ to 1 hr.

Cold Chemic Bleach
1 to 2° Tw. chemic
70 to 80° F.
8 to 12 hr.

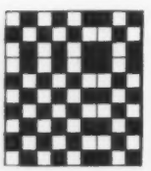
Kier-boiling of colored-yarn shirtings presents some interesting problems to the bleacher



Pick-and-Pick Effects

Can be imitated on box looms having a single box at one end of the lay

BY A. BOWER



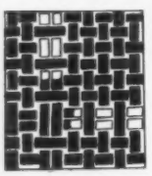
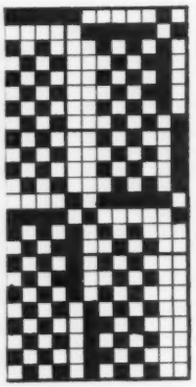


FIG. 1



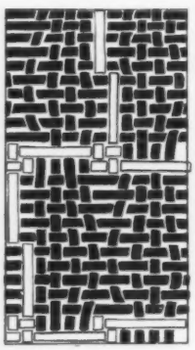


FIG. 2

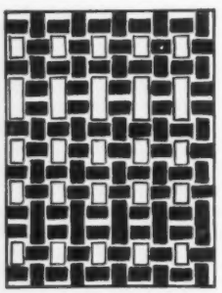


FIG. 3

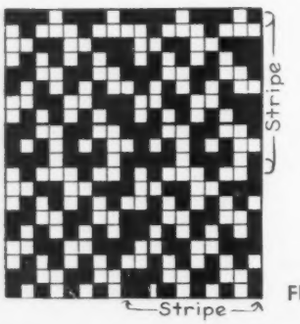


FIG. 4

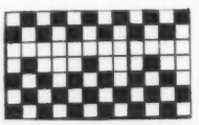


FIG. 5

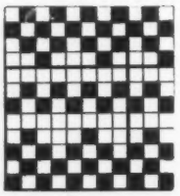


FIG. 6

BOX LOOMS may be divided into two classes. Those weaving single picks of two or more types of filling are usually termed pick-and-pick looms. Those inserting each filling in units of two picks, for example 2x1 and 4x1 looms, comprise the second class. When single fancy threads in the warp are to be crossed by similar picks to form a check, a loom weaving single picks obviously gives the most satisfactory results. On the other hand, many mills which wish to produce pick-and-pick effects have only looms having a single box at one end of the lay. The following examples describe how pick-and-pick effects can be imitated on looms of the second class mentioned.

The weave and color effect shown in Fig. 1 is based on a 60/2 cotton yarn printed alternately green and gold, in 1-in. sections. The warp is dressed 2 cotton, 8 worsted in a suitable setting for a plain weave cloth. Each pair of cotton ends is drawn through one heddle, but they are not crowded in the reed. Filling used is of the same materials and woven in the same order as the warp, with two cotton ends again interlacing as one.

The cloth is piece dyed with wool colors of exactly the same shade as the green portion of the printed cotton yarn. Therefore, after dyeing, the gold parts stand out prominently. The two adjacent gold-colored yarns, weaving as one, appear as a single strand of color in the finished fabric, creating the single-pick effect. Actually, a single warp end of the fancy yarn would be sufficient, or at least the two fancy ends could be reeded as one in order to obtain a finer stripe, but it is advisable to imitate exactly the filling checking and thereby preserve perfect balance of design.

A more ambitious design is illustrated in Fig. 2. This shows fancy ends and picks alternating from face to back of the fabric. As in the first example, the ground is wool. Cotton or rayon yarns are used for the check. It is thus possible to cross-dye the fabric in the piece as desired, without the complications brought about by using yarn-dyed striping yarns.

In the loom state, this cloth will probably contain slight gaps where the two fancy yarns float on the back. In finishing, this fault is removed, the ends on each side of the stripe grouping together to form a perfect plain weave.

It will probably be necessary to use separate beams for ground and fancy ends.

The next example, a partial color effect of which is shown in Fig. 3, is distinguished by the fact that it apparently has two single-pick checkings of different colors, although actually only one all-wool filling is used throughout the fabric. The warp arrangement is as follows.

12x { 1 Wool-and-cotton twist
1 All wool

1 Fancy *A*

12x { 1 All wool
1 Wool-and-cotton twist

1 Fancy *B*

The cloth is woven mainly plain weave. It will be noticed that in order to check warp-fancies *A* and *B* the weave changes from plain to warp rib. Whether all-wool or union warp floats in the rib determines the character of the check formed. It is possible to arrange the ribs so that elaborate shadow effects are produced; the idea can also be extended by using three ground qualities in the warp.

Single-Pick Stripes

Fig. 4 illustrates a rather common type of imitation single-pick checking. The warp stripe is made by a single end of color and weaves in $\frac{3}{1}$ order. The first of each pair of colored picks floats on the back and lifts for stitching in a similar manner to an ordinary filling-backed cloth. The second of each pair of picks shows on the face of the cloth to form a perfect check with the warp. This arrangement causes the three-float filling to be beaten up by the reed so that it completely covers the stitches on the previous pick.

Fig. 5 is a well-known but costly method of single-pick imitation. One of the two picks inserted to make the check is floated on the face of the

cloth all the way across, and cut away either during weaving or in mending. However, in most cases the waste caused by this method is so great as to make it more economical to produce the fabric on pick-and-pick looms.

In certain cases, especially with narrow warps, an improved variation of the foregoing method can successfully be employed. The first pick, as shown in Fig. 6, weaves so that it forms the desired stripe. The second and useless pick of the pair is entirely floated over the warp and lies loosely on the surface of the cloth until the next checking is called for. Then, the first pick of the next pair is made to float all the way across, and the second to weave as desired. This causes the shuttle to trail the slack filling across the piece and to interlace this length as it returns to the multiple-box end of the loom.

If fibrous or slubby yarns are used to produce the check, they will be found to require a great deal of adjustment, but smooth yarns, properly tensioned in the shuttles, can be successfully inserted as single picks. The work, however, must be closely watched and may claim one weaver's undivided attention.

Pick-Cramming Mechanism

Under ordinary circumstances the two methods last describe leave a gap across the cloth where the unwanted pick is made to miss interlacing. This fault can be removed to some extent by cramming the picks when the checking filling is inserted. To do this a string is led from the take-up pawl to one of the levers which lift the harness. Of course, this assumes that the loom is not working to its full harness capacity. It is at once obvious that while the lever to which the string is attached remains stationary, the take-up pawl gives the ordinary amount of take-up. At the desired points, however, a raiser is placed on the chain. This causes the lever to raise the pawl above the ratchet wheel, so that the cloth is not drawn forward. The beat up, acting twice on one point, effectively closes up the gap caused by the floating pick. If due attention is paid to timing and adjustment, the motion can be made successful, irrespective of whether the first or second of a pair of checking picks is interlaced.

Further development of this simple idea has been known to result in outstanding and novel fabrics.

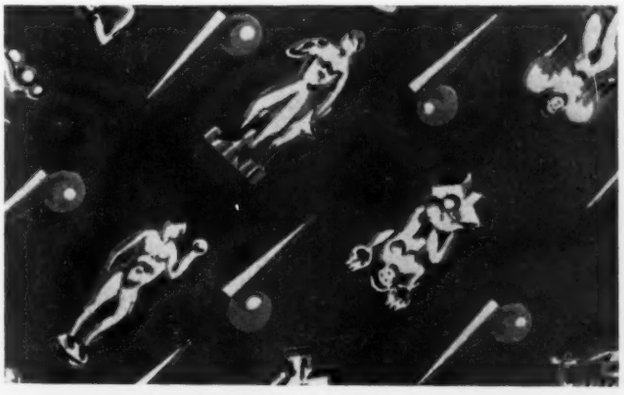
Another popular cloth features faint narrow stripes, the width of one strand of yarn, which appear when the cloth is closely inspected either warpwise or fillingwise. On pick-and-pick looms the effect is obtained by a warp and filling arrangement of alternate S- and Z-twist yarns, combined with a plain weave.

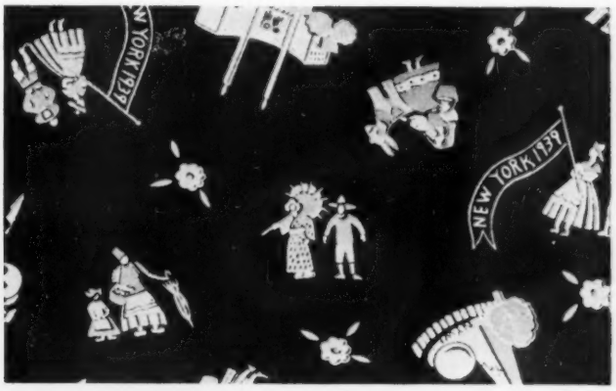
A worsted cloth made as outlined below successfully imitates such a fabric, yet does not require a pick-and-pick loom.

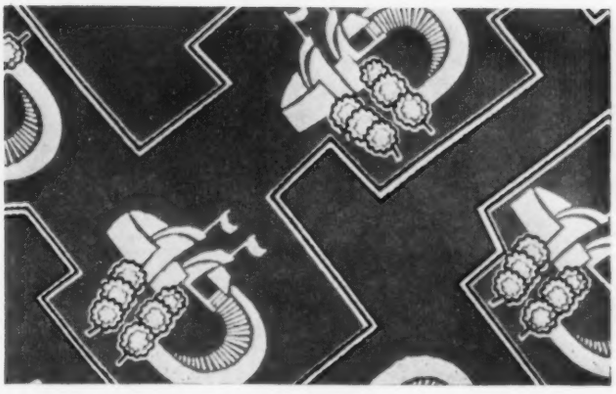
Two 2/32 worsted yarns are required. Yarn *A* has 12 turns per inch of Z twist in the ply. The component singles have, respectively, 30 t.p.i. of S twist and 12 t.p.i. of Z twist. Yarn *B* has 12 t.p.i. of S twist in the ply. The respective singles have 30 t.p.i. of Z twist and 12 t.p.i. of S twist.

The warp is composed of an end-and-end arrangement of yarns *A* and *B*, 32 to the inch. The filling is composed of yarn *A* exclusively, 32 picks to the inch. Plain weave is used.

Pepperell Uses World's Fair Motifs







Pepperell Mfg. Co. is offering a new line of "World's Fair Rayon Prints" which have been designed by Tony Sarg with the cooperation of Maud Perkins Scholle, Pepperell's stylist. Motifs and designs which are associated with the fair have been adapted in a wide variety of patterns. Each pattern is itself available in a range of brilliant colors. The fabrics will go to the consumer not only as piece goods, but in dresses, blouses, etc., at popular prices.

New High for World Rayon Output

Staple fiber now nearly half the total—U. S. 1938 consumption at new high, but production off

WORLD production of rayon in 1938 again broke all previous records with an output of 1,900,000,000 lb. compared with 1,823,000,000 lb. in 1937 according to figures made public by the *Rayon Organon*, published by Textile Economics Bureau, Inc. The gain in total is 4.1%. It is worthy of comment that world production of filament rayon declined 19.0%, while production of staple fiber went up 49.6%. Of total production, staple now accounts for 48.6%, while only four years ago it accounted for a mere 6.3%.

Production of filament yarn in the United States was equal to about 26% of the world's total, but its staple fiber production is only 3% of the

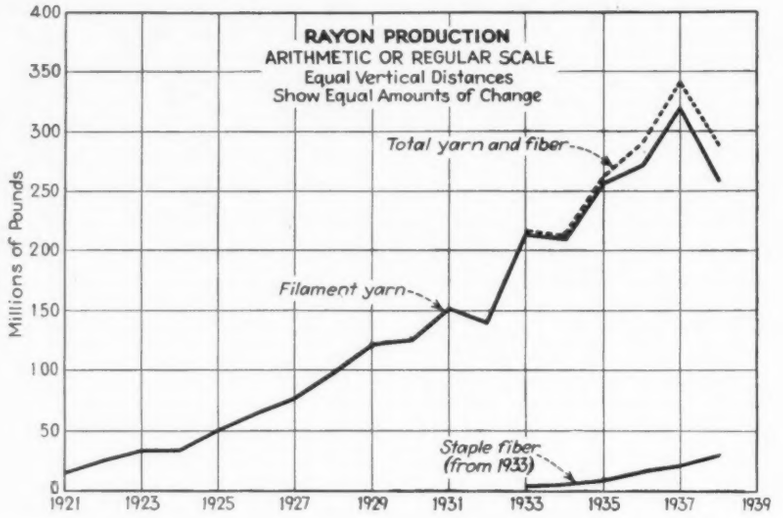


TABLE I—Basic Annual U. S. Rayon Data (Thousands of Pounds and Percent)

A. Rayon Filament Yarn

Year	Domestic Production						Total Domestic Shipments	Change in Domestic Stocks	Imports for Consumption	Exports	Import Balance	Domestic Consumption
	Viscose Cupra & Nitro		Acetate		Total							
1911	363	*100*	.....	...	363	*100*	315	+ 48	1,800		1,800	2,115
1912	1,111	*100*	.....	...	1,111	*100*	1,117	− 6	1,750		1,750	2,867
1913	1,816	*100*	.....	...	1,816	*100*	1,566	+ 250	2,430		2,430	3,996
1914	2,422	*100*	.....	...	2,422	*100*	2,444	− 22	2,740		2,740	5,184
1915	3,885	*100*	.....	...	3,885	*100*	4,107	− 222	2,450		2,450	6,557
1916	5,778	*100*	.....	...	5,778	*100*	5,741	+ 37	900		900	6,641
1917	6,544	*100*	.....	...	6,544	*100*	6,429	+ 115	370		370	6,799
1918	5,846	*100*	.....	...	5,846	*100*	5,827	+ 19	180		180	6,007
1919	8,228	*99.4*	50	*0.6*	8,278	*100*	8,219	+ 59	1,072		1,072	9,291
1920	10,005	*98.8*	120	*1.2*	10,125	*100*	7,238	+ 2,887	1,480		1,480	8,718
1921	14,866	*99.2*	120	*0.8*	14,986	*100*	16,475	− 1,489	3,276		3,276	19,751
1922	23,947	*99.5*	120	*0.5*	24,067	*100*	22,631	+ 1,436	2,116		2,116	24,747
1923	34,839	*99.7*	120	*0.3*	34,959	*100*	29,529	+ 5,430	3,029		3,029	32,558
1924	36,208	*99.7*	120	*0.3*	36,328	*100*	40,289	− 3,961	1,954		1,954	42,243
1925	49,429	*96.8*	1,620	*3.2*	51,049	*100*	52,836	− 1,935	5,441	148	5,293	58,277
1926	60,073	*95.8*	2,620	*4.2*	62,693	*100*	51,284	+11,008	9,345	400	8,945	60,629
1927	70,408	*93.2*	5,147	*6.8*	75,555	*100*	85,021	− 9,866	15,034	401	14,633	100,055
1928	91,232	*93.8*	6,000	*6.2*	97,232	*100*	87,984	+ 9,052	12,144	196	11,948	100,128
1929	112,954	*93.0*	8,445	*7.0*	121,399	*100*	116,410	+ 4,767	15,055	223	14,832	131,465
1930	117,543	*92.3*	9,790	*7.7*	127,333	*100*	111,627	+15,361	6,340	345	5,995	117,967
1931	135,249	*89.6*	15,630	*10.4*	150,879	*100*	155,556	− 4,991	1,804	314	1,490	157,360
1932	116,379	*86.4*	18,291	*13.6*	134,670	*100*	151,838	−17,821	197	653	− 456	152,035
1933	172,402	*80.8*	41,096	*19.2*	213,498	*100*	210,949	+ 1,439	934	1,110	− 176	211,883
1934	170,307	*81.8*	38,014	*18.2*	208,321	*100*	194,694	+11,118	77	2,509	− 2,432	194,771
1935	202,010	*78.4*	55,547	*21.6*	257,557	*100*	252,650	+ 2,688	26	2,219	− 2,193	252,676
1936	214,926	*77.4*	62,712	*22.6*	277,638	*100*	297,347	−21,521	255	1,813	− 1,558	297,602
1937	239,316	*74.4*	82,365	*25.6*	321,681	*100*	266,202	+52,957	872	1,397	− 525	267,074
1938	181,795	*70.5*	76,121	*29.5*	257,916	*100*	273,800	−17,309	est 250	est1,425	− 1,175	274,050

B. Rayon Staple Fiber

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	
Domestic Production.....	165	500	350	880	1,100	2,100	2,200	4,600	12,300	20,244	29,833	
Imports — Staple Fiber.....	54	1,052	427	663	2,185	3,302	215	1,457	12,718	20,610	23,500	est.
Imports — Spun Yarn.....	146	384	91	52	11	18	6	4	3	4	4	
Available for Consumption...	365	1,936	868	1,595	3,296	5,420	2,421	6,061	25,021	40,858	53,337	

TABLE II—Distribution of Rayon Yarn Shipments by Trades

(*Units Are Millions of Pounds and Percent*)

	Hosiery		Other Knit		Broad Woven		Narrow Woven		Miscellaneous		Sub-Total Knit		Sub-Total Woven		Total Shipments	
	lbs.	%	lbs.	%	lbs.	%	lbs.	%	lbs.	%	lbs.	%	lbs.	%	lbs.	%
1925	10.7	*20*	10.5	*20*	26.1	*50*	2.9	*5*	2.6	*5*	21.2	*40*	29.0	*55*	52.8	*100*
1926	10.3	*20*	15.0	*29*	21.2	*42*	2.2	*4*	2.6	*5*	25.3	*49*	23.4	*46*	51.3	*100*
1927	16.7	*20*	28.9	*34*	31.5	*37*	3.3	*4*	4.6	*5*	45.6	*54*	34.8	*41*	85.0	*100*
1928	14.7	*17*	32.9	*37*	32.5	*37*	3.2	*4*	4.7	*5*	47.6	*54*	35.7	*41*	88.0	*100*
1929	18.8	*16*	43.7	*37*	45.4	*39*	3.1	*3*	5.4	*5*	62.5	*53*	48.5	*42*	116.4	*100*
1930	16.5	*15*	38.0	*34*	49.5	*44*	3.0	*3*	4.6	*4*	54.5	*49*	52.5	*47*	111.6	*100*
1931	21.1	*14*	48.7	*31*	75.6	*49*	4.0	*2*	6.2	*4*	69.8	*45*	79.6	*51*	155.6	*100*
1932	19.0	*13*	38.0	*25*	84.6	*56*	3.9	*2*	6.3	*4*	57.0	*38*	88.5	*58*	151.8	*100*
1933	17.0	*8*	41.3	*20*	141.3	*67*	5.5	*2*	5.9	*3*	58.3	*28*	146.8	*69*	211.0	*100*
1934	14.1	*7*	39.9	*21*	131.3	*68*	4.8	*2*	4.6	*2*	54.0	*28*	136.1	*70*	194.7	*100*
1935	14.7	*6*	47.9	*19*	179.5	*71*	5.2	*2*	5.4	*2*	62.6	*25*	184.7	*73*	252.7	*100*
1936	16.3	*5*	51.0	*17*	217.0	*73*	8.2	*3*	4.9	*2*	67.3	*22*	225.2	*76*	297.4	*100*
1937	12.6	*5*	39.4	*14*	202.2	*76*	7.2	*3*	4.8	*2*	52.0	*19*	209.4	*79*	266.2	*100*
1938	14.2	*5*	40.9	*15*	209.0	*76*	6.0	*2*	3.7	*1*	55.1	*20*	215.0	*79*	273.8	*100*

total. Japan continues to be the largest rayon producer in the world with total output of 550,000,000 lb., including 20% of the world yarn total and 35% of the world staple production. German and Italian staple fiber production increased substantially during 1938.

U. S. Consumption at New High

United States rayon consumption during 1938 reached a new all-time high total of 327,387,000 lb. which compares with 322,623,000 lb. consumed in the previous record year of 1936. The 1937 consumption was 308,000,000 lb.; 1935, 259,000,000; 1934, 197,000,000.

As between the processes, the viscose-plus-cupra yarn shipments in 1938 were slightly lower than 1937, but the acetate yarn shipments increased substantially and thus the total domestic rayon yarn shipments in 1938 exceeded the 1937 total by over 7,000,000 lb.

From the end of 1937 to the end of 1938, there was a substantial reduction in rayon inventories held by producers. By the end of 1938, the yarn inventory situation had returned to a more normal basis.

Rayon yarn consumption by principal trades showed no significant changes during 1938. In the viscose-cuprammonium division, the main change was an increase in shipments to the knit underwear and outerwear industry. For the acetate yarn, the larger takings by the hosiery and the broad-weaving industries were noteworthy. In the broad-weaving field, increasing use of acetate yarn in combination with viscose yarn or other fibers has undoubtedly been a real factor in the increase.

U. S. Rayon Production in 1938

Rayon yarn production during 1938 at 257,916,000 lb. showed a substantial reduction from the 1937 level, and apparently represented the efforts of the individual rayon producers to reduce their yarn stocks from the high level of December 1937. Another factor here was the finer average denier of yarn spun during 1938.

Acetate yarn production continued to become an increasing part of production, this process accounting for 29½% of the yarn produced last year.

Production of rayon staple fiber in this country increased nearly 50% from 1937 to 1938, although 1938 imports of staple showed only a nominal increase of 15% over the 1937 figure.

Yarn Production by Denier

One of the most significant developments in the viscose-cuprammonium field was the production and sales trend to finer yarns during 1938, particularly during the last half of the year. The average denier of these yarns dropped from 142 to 137. The principal shift to the fine deniers in rayon generally, has been away from the medium deniers, as shown in Table III; the relative standing of the coarse deniers has been essentially unchanged for three years.

Because the output of a viscose yarn spinning machine is directly proportional to the denier of yarn spun, it will be seen that today's increasing yarn production in the finer deniers means an increasing utilization of the industry's capacity per measured pound of yarn produced.

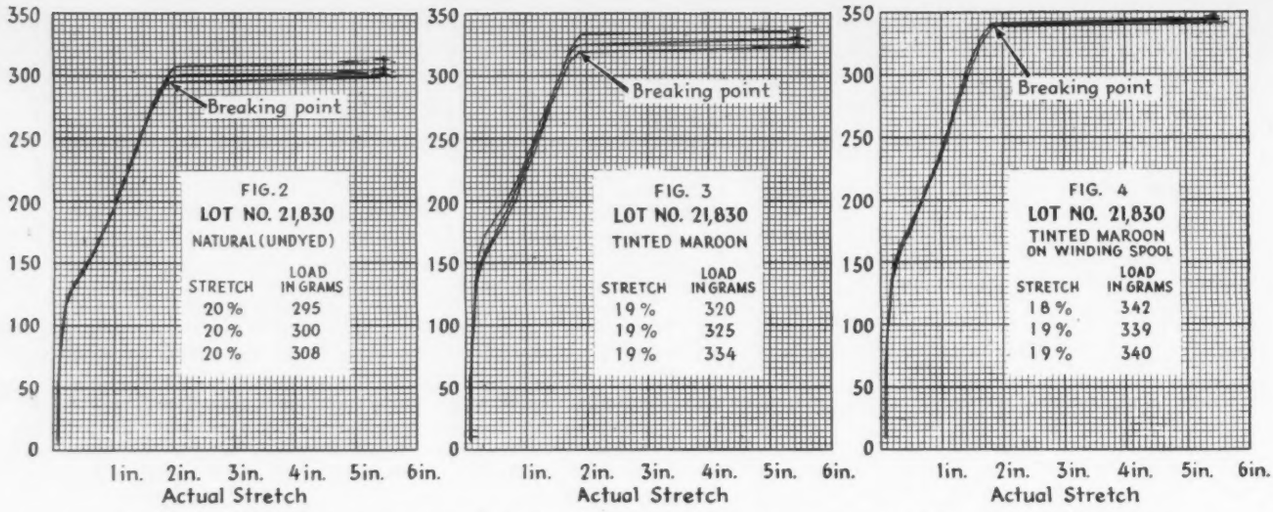
TABLE III—Yarn Production by Denier (Percent)

	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Total Fine Deniers (112 denier and finer)....	9.9	11.5	14.2	19.1	26.0	26.4	26.8	21.0	24.3	25.5	32.1
Total Medium Deniers (113–162 denier).....	74.0	72.9	71.7	69.0	64.8	62.8	59.5	62.1	61.7	60.4	54.0
Total Coarse Deniers (163 denier and coarser)..	16.1	15.6	14.1	11.9	9.2	10.8	13.7	16.9	14.0	14.1	13.9
Grand Total of All Deniers.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

TABLE IV—World Rayon Production (Millions of Pounds)

	(Estimated) 1938	1937	1936	1935	1934	1930
Rayon Filament Yarn..	975	1,205	1,021	940	772	451
Rayon Staple Fiber....	925	618	298	139	52	6
Total.....	1,900	1,823	1,319	1,079	824	457

LAST September, in our Annual Rayon Number, we estimated the total United States rayon filament yarn production in 1938 at 275,000,000 lb. The final figure, as noted above, was 257,916,000. Consequently our prediction was about 7% in excess . . . We estimated staple fiber production in the United States at 30,000,000 lb. The final figure was 29,833,000 lb.—EDITOR.



Figs. 2 to 6. Graphs showing results of single-strand tests on rayon yarn as received from the producer, after dyeing, after winding, after twisting, and after steaming and rewinding on shipping spool

Single-Strand Testing

Employed in dyeing and converting rayon yarns for control of product and processes

FOR SOME time one of the larger dyers and converters of rayon yarns has made extensive use of single-strand testing equipment in establishing standards and in controlling raw materials, processes, and finished products. A survey of testing practice in that plant shows such uses as: (1) testing yarn received for uniformity and adherence to standard, (2) determining the effect of various dyes and dyeing methods, (3) checking the reaction of yarn to known humidity conditions, (4) setting up tension standards for each operation, (5) checking the effect of twist on strength, (6) determining the necessary ageing period after steaming, and (7) comparing finished product with established performance standards.

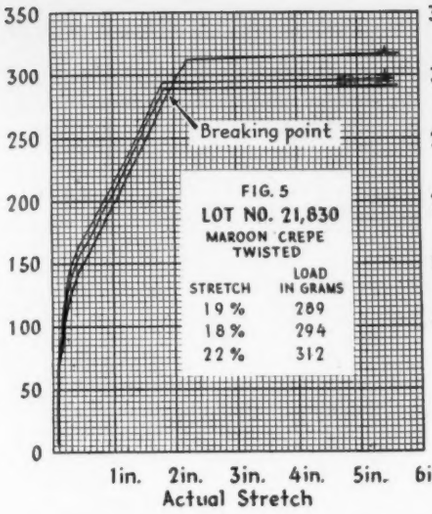
A corner of the laboratory in which the testing is carried out is shown in Fig. 1. Single-strand tests are made on a Scott incline-plane serigraph. In the photograph the operator has placed a 10-in. strand of rayon yarn between the clamps and is placing the stylus at zero preparatory to switching on the motor drive to incline the plane carrying a rolling weight which loads the specimen.

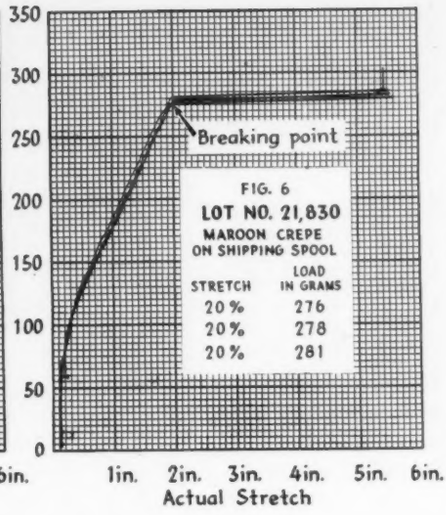
A lot is sampled by breaking on the machine a representative number of individual strands from different skeins, after which the results are checked with standard tables for each type and size of yarn. Because of testing individual strands, sub-standard material or stock lacking in uniformity is readily discovered. Fig. 2 shows a test chart for single strands of rayon as received by the mill from the yarn producer. The vertical distance traveled by the recording pen before the strand broke indicates application of weight; the horizontal distance traveled during the same period indicates stretch in inches. It will be noted that the three samples of yarn broke at a load of 295, 300, and 308 grams, respectively, and that the stretch was approximately 20% in each case.

Fig. 3 shows yarn from the same lot after being dyed maroon. Note the increased breaking strength. Single-strand testing enables the mill to determine accurately the effect of various dyes and chemicals on the strength of the yarn, and to set up standard dyebath temperatures and other conditions.

Another important use of individual-strand testing is in determining the proper tensions in the various operations for different classes of goods.

Fig. 1. Corner of laboratory showing Scott incline-plane serigraph used in making single-strand tests





In winding, twisting, and rewinding for shipment, it is highly desirable to produce firm packages, yet retain the original elongation properties of the yarn unimpaired. Fig. 4 shows tests of yarn after winding on spools, and Fig. 5 shows tests after twisting. Some loss of strength is noted after twisting; but even in extreme cases the yarn should never lose more than 20% of its maximum strength. Here again, the single-strand test gives a quick, sure check, when results are compared with tables for the various types of yarns. If tests of yarn from the twisting department are made several times daily, slight variations from normal, but commercially acceptable, can be found and corrected.

After the steaming operation, the serigraph is used as a production tool to determine when yarn is ready for rewinding. Some yarns require only ½ hr. of ageing, others need as much as 16 hr. If the yarn is rewound before proper ageing, the package will be more or less uneven when it reaches the user. By testing samples every hour after steaming, using specimens from outside, center, and next the spool, one can determine accurately when the moisture content is uniform throughout the spool, and when it has leveled with room conditions. This is determined by comparing the strength with a standard table for that yarn at various humidities. In theory this might seem unnecessary, but in actual practice the amount of humidity picked up by the yarn in steaming depends upon the total load in the steam chest. For this reason, any one type of yarn requires different ageing periods when the load varies.

Finally, results of single-strand tests of the finished yarn (Fig. 6) are compared with set standards.

A further application of the single-strand test is to check the effects of room humidification. Recording apparatus is employed to show the relative humidity in the room, and theoretically the yarn reacts to a given humidity in a certain definite manner. Single-strand testing, coordinated with moisture-content tests, gives a reliable indication of whether or not the yarn is reacting normally to the known atmospheric conditions.

Finally, it should be mentioned that through the results obtained by single-strand testing the department heads have gained an intimate knowledge of the behavior of the yarn in process and have been able to maintain much closer control of the dyeing, winding, twisting, steaming, and rewinding.

Neophil

First textile product made in commercial quantities from Nylon

"SEWING thread made of Nylon is already on the market." That brief mention in our November, 1938, issue of what is believed to be the first product to be made in commercial quantities from the new synthetic fiber developed by E. I. du Pont de Nemours & Co., can now be amplified. This type of sewing thread, called Neophil, is produced by Premier Thread Co., Pawtucket, R. I. It has already found a number of important applications and new uses are being discovered constantly. The outstanding characteristics of Neophil are its elasticity, strength, fineness, and uniformity; ability to withstand repeated launderings without impairment of properties; resistance to moisture and perspiration; and resistance to abrasion and wear. The thread is now being supplied on 1- and 4-oz. spools, in 2- and 3-cord types, in various sizes ranging from 7,000 to 35,000 yd. per lb., and in a wide variety of colors

Spool of Neophil

of high fastness to washing and light. Standard tensile strength is 5 grams per denier; standard elognation, 25%; dry strength is approximately the same as that of first-quality silk thread.

Among the present applications for Neophil are included seaming and button-holing men's clothing; seaming hosiery; topstitching and closing men's shoes; stitching and seaming women's two-way-stretch foundation garments; seaming lingerie and other garments cut on the bias; seaming felt hats; bonnazing blankets; and seaming parachute, balloon, airplane fabrics. As yet Neophil has not been made available for home use.

Commercial production of Neophil was preceded by a large amount of experimental and development work carried out by W. E. Mahoney, president of Premier Thread Co., in collaboration with Du Pont technicians. It was necessary, for example, to develop new throwing standards and to devise new dyeing formulas. Although all production problems have not yet been solved, Mr. Mahoney states that considering the short time Nylon has been available, and all that had to be learned regarding its properties, he is having very little trouble in handling it in his plant.

Selvage Formation

Practical advice for knitters of full-fashioned hosiery

By J. LLOYD BREWER

Superintendent, Standard Hosiery Mills, Burlington, N. C.

THE PROCESS of yarn feeding and sinking, in full-fashioned knitting, must be clearly understood, before one can understand the formation of selvages. Full-fashioned hosiery machines first kink the yarn successively between every two needles by means of the sinkers. Hence, the first consideration in feeding is carrier lead. This may vary, but can function properly only at a minimum of nine sinkers ahead of the last sinker reaching its forward position. In the plating of the splicing and heel it is found that the shortest possible lead produces the best plating. Because of the short lead, the yarn runs at a greater angle from the carrier tube to the sinker throat. This results in selvage loops, caused by the top of the last active sinker striking the yarn.

Also to be considered in yarn sinking is the Coulier motion, which imparts the reciprocating motion to the splicing shaft. This motion should be so maintained that the pitman rollers react against the Coulier cam in an absolutely horizontal line to each other; otherwise, it would disturb the carrier lead. It should also have all wear in its hinge pins and gears taken up and the brake tightened periodically to prevent the carriers on the selvages from moving during the narrowing action. Worn friction boxes and glazed friction leathers should be replaced. Glazed friction leathers are among the greatest sources of evil. The superintendent of a leather tannery advised that the best preventive of glaze would be the oils extracted from the hides during the tanning process. These oils are employed in compounding a number of good belt dressings. The writer found that a belt dressing of this type is decidedly superior to oils commonly employed for use on belts.

Carrier Action Is Important

The carrier rods and their bearings are other factors to be considered in yarn sinking. Unless the bearings are kept well oiled, they develop wear, which permits the rods to buckle, so that it is impossible to maintain the carrier tube settings at the center of the sinker spaces and ⅛ in. below the sinker tops. This condition can be remedied by removing the carrier-bracket covers and filing both brackets and covers to a closer fit for the rods, leaving possibly 0.003 in. of clearance in the bearings.

The next process after sinking is dividing. The dividers move en masse, one for every two needles. Their throats engage the straight strands of yarn before each pair of needles and, by continued movement between the needles, the dividers kink the yarn around each needle. Until fairly recent years full-fashioned machines were built to make the conventional

Many factors enter into the formation of good selvages

square heel. Therefore, they had the split or selvage divider extending inwardly only from each end of the sinker head to the limit of the narrowing finger travel; the balance of the dividers were of the plain type. Later, came the Pointex heel and the French heel, which necessitated the use of split dividers in all but the narrowest instep portion of the head. The split divider has an extra throat formed in its nose, which functions only at such times as the carrier is located over it during selvage formation. Of course, the object of the throat is to prevent the formation of a loop in the section of yarn extending from the selvage sinker to the carrier tube. Use of a plain divider on the selvage permits that loop to be drawn and to appear on the selvage. Therefore, the only correction for that condition is the replacing of plain dividers with split dividers.

Following the dividing operation, the needles move downward and toward the press, with the catch bar holding the sinkers and dividers at their forward position to maintain the new yarn kinking. Of course, the object of pressing is to close the needle beard with the newly formed kink beneath, and to permit the previously formed row of loops to leave the needles. At this point the gaging or timing of the needle-bar motion should be such as to permit the beard of the selvage needle to close without touching the previously formed loop or pinching the yarn which forms the new loop around the selvage needle.

Knocking-Over

Another item to check when selvage troubles develop is the knocking-over of the stitch. The sinkers should not be allowed to recede far enough to allow the yarn extending from the selvage to the carrier tube to fall outside the selvage sinker, as that will cause a long loop. Here, the draw-off motion also must be considered; if too much weight is carried, it will cause the selvage needles to flex sufficiently to rise on the wrong side of their sinkers.

When the needles reach the level of the sinker throats while coming up, their tips should lie evenly in the bottom of the throats. If the needles lie too deeply, a loop is formed around the needle adjacent to the selvage; if they do not lie deeply enough, the selvage needle may lose its stitch on the succeeding course. Either of these conditions can be caused by bad catch-bar adjustment, bad presser-roller adjustment, or poor needle alignment or adjustment.

Among other causes of poor selvages are excessive speed, hard silk, stickiness due to improper silk soaking, and wrong direction of twist. A Z-twist yarn never makes as good a selvage on the right side as on the left; and, conversely, a S-twist yarn never makes as good a selvage on the left side as on the right. Compensated twists are preferable for making good selvages.

Finally, good selvages cannot be made with gummed-up tension wires or tension rings, dirty moistening felts, or dirty snappers and carriers.

Abstract of a paper presented at the fall meeting of the Northern North Carolina-Virginia Division of the Southern Textile Association.

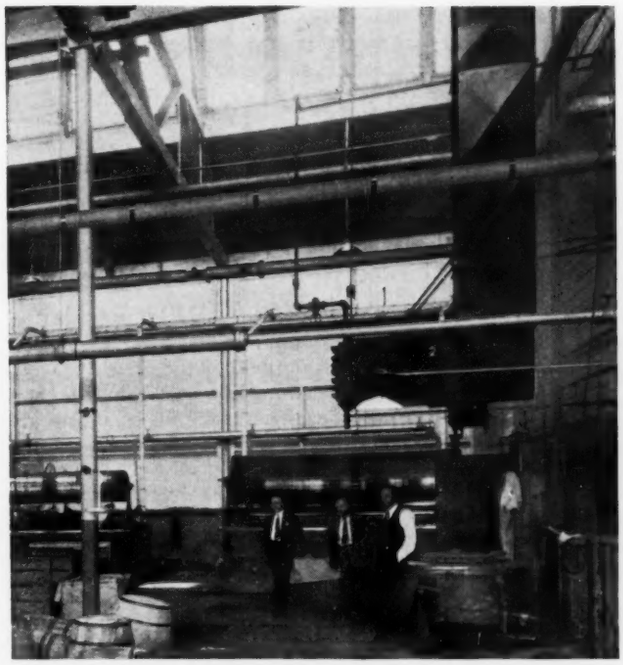


Fig. 1. View in dyehouse of E. & W. Dyeing Corp. One of the unit heaters is shown, above men, at upper right of photograph

Fig. 2. Two of intakes which supply fresh air to unit heaters in dyehouse. Fans exhaust moisture-laden air through ventilators in monitor

Condensation and Fog

Eliminated in plant of E. & W. Dyeing Corp. by use of unit heaters and exhaust fans

BY FRED MERISH

ELIMINATION of fog and condensation is a problem in many dyehouses. This is particularly true in older plants where the heating and ventilating systems are inadequate. If the dyehouse is not properly ventilated and heated, the air absorbs as much moisture as it can. Then when the warm moisture-laden air hits a cold ceiling or wall, condensation results. Again, in some plants which have an adequate ventilation system, but an inadequate heating system, heavy fog is present on cold days. This is due to the fact that in order to prevent drafts little or no fresh air is admitted to the room and the exhaust system becomes choked. With a well-balanced and coordinated system of heating and ventilating, these troubles can be avoided. Such a system was installed by the E. & W. Dyeing Corp., of Paterson, N. J.

Formerly this plant was heated by means of pipe coils. This method has been superseded by an installation consisting essentially of 26 unit heaters and 12 exhaust fans supplied by the Ilg Electric Ventilating Co. Fresh air enters the plant through intakes in the roof, is warmed by the unit heaters, and circulated through the rooms by fans in the heaters. The warm air absorbs moisture and then the exhaust fans in the monitor exhaust the moisture-laden air from the building.

Recirculation of Air

In the dyehouse and finishing room the unit heaters are equipped with recirculating dampers. With this system, when the temperature in the plant reaches the desired point, the inlet dampers automatically close, preventing further infiltration; the unit heater continues to circulate the air inside the plant until the dampers again open. M. D. Tinker, plant engineer, reports that the recirculating dampers effect a considerable economy in operation of the system during cold weather. Also, it is possible in the winter to maintain an inside temperature of 70° F., regardless of the outside temperature, and yet supply fresh air to the interior in sufficient intermittent quantities to eliminate fog and keep the room comfortable for occupancy by operatives.

In some mills the exhaust fans cause an annoying infiltration of air. This may happen in a badly insulated mill with poorly fitting windows, or it may be due to frequently opened doors. In such cases, a blast coil installed in a window frame or doorway serves as a vacuum breaker. By means of the coil, which tempers the fresh air supply passing over it as it comes through the window or door, the exhaust fans are saved from air starvation. Unit heaters will eliminate drafts caused by infiltration, because the fan keeps the air continually in motion, preventing stratification of heated air at the ceiling and cold air on the floor.

E. & W. Dyeing Corp., operates its equipment winter and summer. In summer, with the heat turned off, the rate of air change provided by the fans in the unit heaters is sufficient to maintain good working conditions, irrespective of the quantity of moisture and heat thrown off by the plant processes. Mr. Tinker states that this results in higher production and better work.

Spinning-Room Humidity

Tests with coarse and fine cotton yarns indicate conditions which give best results

By H. L. KEMPANER
Carrier Corp.

THE THEORY that coarse yarns require a higher percentage of moisture than fine has been a subject of debate in the air-conditioning and cotton-manufacturing fields for some time. However, after considerable research in which innumerable tests with various types of yarns have proved that the spinning of coarse yarn is more efficient at higher humidity, this theory is rapidly becoming recognized.

Moisture content during the process of spinning has an extremely important effect upon the ultimate success of cotton manufacturing. Proper conditioning of the spinning room air, by allowing a more even drafting, aids considerably in the elimination of the so-called drafting wave caused by the smooth, slippery texture of the cotton fibers. Moisture content in the proper degree allows the fibers to cohere evenly with a minimum twist. This is a decided advantage (since twisting is costly), and is particularly noticeable when short-staple cotton is being spun.

Requirements Vary

Regain is a function of the relative humidity and dry-bulb temperature, but the effect of the dry-bulb temperature is so minute that it can normally be neglected. The manufacturer can, through proper regain, prevent considerable loss of material and labor values, allow the yarn to gain in strength, and eliminate excessive dry weight. Definite requirements of humidity vary with the product being manufactured. Consequently, each case should be studied thoroughly beforehand, in order to determine under exactly what humidity conditions the best results can be obtained.

The manufacturer should realize that air-conditioning the spinning room only, will not produce the desired final regain in the subsequent finished product. Proper conditioning during the processes which follow spinning is of the utmost importance.

Fine yarns are usually spun from weaker cotton fibers to obtain strength. This statement, taken literally, sounds unbelievable. However, since the weaker fibers are finer, there will be more fibers per cross-sectional area for any given yarn count. The larger number of fibers implies a better distribution of weak links in the act of drafting.

To measure properties of singles yarn is practically impossible. Although it is true that yarn will break at its weakest place, that weak place may dart from one position to another all along the yarn during the time any pull is exerted on it. If yarn were devoid of this property of self-adjustment, cotton spinning would be impossible, especially in the finer counts. Where two singles are twisted together for a 2-ply yarn, this instability is largely obliterated.

Due to readjustments in the spiralled packing of the fibers, it appears that in ordinary lengths of good yarn each fiber usually takes its share of strength. Weakness in the yarn is due generally to insufficient cohesion of the fibers. The extent to which the fibers will cohere without slipping on one another depends largely on the twist angle, whether this be fairly simple as in singles yarn or more complex as in doubles yarn.

Effect of Humidity

in spinning on strength and uniformity of cotton yarn. Table shows averages of tests, ring size, and average of each group.

(Reprinted through courtesy of A. N. SHELDON, from "Miscellaneous Scientific Papers of F. P. Sheldon & Son")

Ring Size	Yarn Size	Aver. Break	Aver. Factor	Size Var. %
	Test No. C1			
1½	27.81	48.9	1359	11.5
1¾	27.70	49.5	1371	11.8
2	27.81	49.4	1372	12.2
2¼	28.34	48.3	1369	10.1
Ave.	27.91	49.0	1368	11.4
	Test No. C2			
1½	26.88	51.5	1394	12.1
1¾	26.97	55.1	1485	14.8
2	27.18	52.2	1434	13.5
2¼	26.77	54.4	1455	14.8
Ave.	26.95	53.3	1442	13.8
	Test No. C3			
1½	26.59	53.7	1427	12.2
1¾	27.89	52.2	1455	15.5
2	27.53	52.1	1433	13.8
2¼	26.96	53.8	1449	10.9
Ave.	27.24	52.9	1441	13.1
	Test No. C4			
1½	27.20	56.6	1539	10.5
1¾	27.70	54.8	1519	11.7
2	27.40	55.1	1492	11.9
2¼	26.90	56.5	1519	11.6
Ave.	27.30	55.6	1517	11.4
	Test No. C5			
1½	26.92	56.6	1524	12.9
1¾	26.99	57.5	1551	13.1
2	26.81	57.9	1552	10.5
2¼	26.61	58.5	1555	11.2
Ave.	26.83	57.6	1545	11.9
	Test No. C6			
1½	26.72	59.7	1596	11.5
1¾	27.27	57.9	1578	10.0
2	27.15	59.2	1606	11.0
2¼	26.42	60.6	1601	10.7
Ave.	26.89	59.3	1595	10.8
	Test No. C7			
1½	26.81	55.8	1495	11.5
1¾	25.86	61.3	1586	13.4
2	26.49	60.2	1593	14.2
2¼	26.25	59.5	1561	14.1
Ave.	26.35	59.2	1559	13.3
	Test No. C8			
1½	26.30	57.7	1517	13.1
1¾	26.70	58.5	1563	15.5
2	26.74	59.6	1593	14.7
2¼	26.37	60.3	1592	12.5
Ave.	26.52	59.0	1566	13.9

Conditions for Fine Yarns

In the spinning of fine yarns a proper humidity is necessary, normally 60 to 65% relative humidity. Ordinarily, any increase in this percentage is of no advantage. However, this naturally would depend on the fineness of the yarn, length of staple, and other local conditions. The room humidity is important in the elimination of static electricity. This is desirable in fine yarn spinning, due to the delicacy of the weaker fibers used to achieve greater strength. Since fine yarns are generally spun from a better grade and longer staple cotton than are coarse yarns, there is less need to assist in the cohesion of the fibers. Consequently a slightly lower relative humidity can be maintained than for coarse yarns.

On the other hand, should a shorter staple be used in the spinning of fine yarns, considerably more twist would be required for adequate strength and proper spinning. In this case, relative humidities of say 65 to 70% would be desirable, since this greater twist would render the yarn relatively slow to absorb moisture. Furthermore, with lower humidity, the yarn would have a greater tendency to kink or curl.

Another consideration would be whether or not preceding processes have the benefit of air conditioning. If, for instance, the roving reaches the spinning room in proper condition, good spinning is facilitated. Contrary to this, it would be difficult to know exactly what relative humidity would produce favorable results if the roving reached the spinning frame in a dry, uneven state.

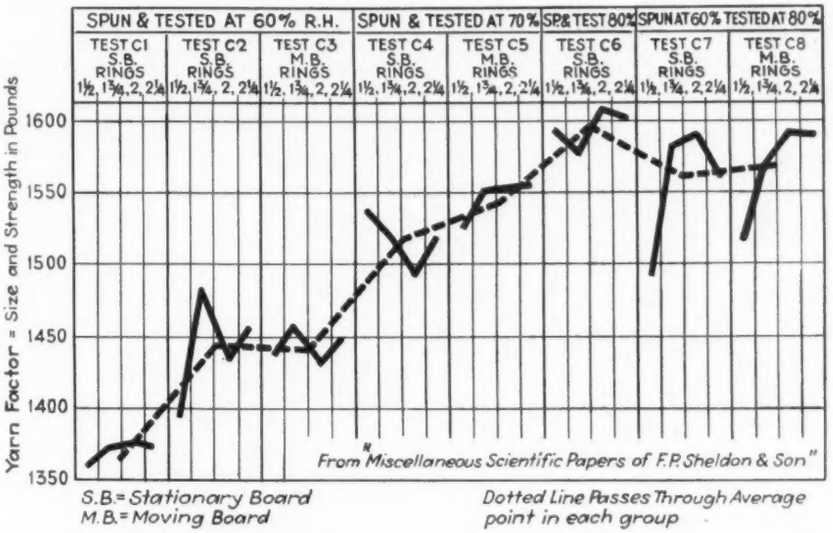
Short staple cotton cannot be spun

into so fine a yarn as long staple cotton, since the smaller surfaces of the short fibers do not give the same total cohesion. It would be possible for short-staple cotton to produce as fine a yarn as long staple if sufficient twist were provided. However, it is unlikely that short-staple yarn would be as durable, because the tendency of yarn to untwist would come into play more quickly with yarn spun from short fibers.

Coarse yarns will, in general, run better with a relative humidity of from 65 to 70%, as against the slightly lower humidity range for fine yarns. This may be due generally to the greater speed with which coarse yarn is spun, bulkier roving, and shorter staple cotton—all resulting in a higher twist being required, so that the yarn is slower to absorb moisture from air.

From laboratory tests on cotton, it has been discovered that dry cotton fibers are about 40% stiffer than wet ones. Moisture is important in spinning coarse yarns from short staple cotton, as it makes the fibers more pliable, so that greater twist can be applied. Also, it improves the surface friction of the fibers by increasing cohesion. Similar tests show that the capacity of raw cotton to absorb moisture amounts to a maximum of approximately 17% at a relative humidity of 95%, starting from a bone-dry state. At 70% relative humidity cotton can absorb approximately 50% as much water as it can at 95% relative humidity, or in other words 8.5% moisture absorption, for purposes of regain. Tests indicate also that normally two days are required for the moisture content of cotton to reach equilibrium, when any noticeable change in humidity is made.

Humidity is the primary factor (with temperature secondary) from the standpoint of production in the above analyses, as long as the temperature remains within a normal range. Consequently this brings to light the resulting necessity for the control of relative humidity to keep the cotton in a constant state of equilibrium. Lately, more mill operators are considering the welfare of the employees as regards their better health, greater comfort, and larger man-hour productive ability To obtain proper humidity in a spinning room, there is more to consider than the mere adding of moisture to the air. The proper distribution of conditioned air is of primary importance to dissipate the relatively large internal heat load imposed by the machinery in order to maintain a desirable condition for comfort and assure a greater uniformity of relative humidity throughout the entire spinning room—and especially between the frames. This distribution is accomplished most economically with the combination split-type system which combines the best features of a central-station system and an atomizer spray-type system. This type of system was first brought out some 20 to 25 years ago. The earliest applications of this split system were made for weaving or other processes which required comparatively high humidities. The economic advantages of this type of system increase directly and in almost geometric progression with increases in relative humidity. A balance point exists at approximately 65% relative humidity. At relative humidities below 65% this type of system is more expensive than straight central-station type systems; and at relative humidities above 65% it is less expensive.


SPUN & TESTED AT 60% R.H.
SPUN & TESTED AT 70%
SP.& TEST 80%
SPUN AT 60% TESTED AT 80%
TEST C1 S.B. RINGS 1½, 1¾, 2, 2¼
TEST C2 S.B. RINGS 1½, 1¾, 2, 2¼
TEST C3 M.B. RINGS 1½, 1¾, 2, 2¼
TEST C4 S.B. RINGS 1½, 1¾, 2, 2¼
TEST C5 M.B. RINGS 1½, 1¾, 2, 2¼
TEST C6 S.B. RINGS 1½, 1¾, 2, 2¼
TEST C7 S.B. RINGS 1½, 1¾, 2, 2¼
TEST C8 M.B. RINGS 1½, 1¾, 2, 2¼
Yarn Factor = Size and Strength in Pounds
1600
1550
1500
1450
1400
1350
From "Miscellaneous Scientific Papers of F.P. Sheldon & Son"
S.B.= Stationary Board
M.B.= Moving Board
Dotted Line Passes Through Average point in each group

Effect of humidity in spinning cotton yarn. Chart shows breaking-strength factor for ring size in each test group referred to in table.

The accompanying chart and table serve to show some effects of humidity on yarn. (Chart and table reprinted through courtesy of A. N. Sheldon from "Miscellaneous Scientific Papers of F. P. Sheldon & Son," Providence, R. I.) The sliver and roving were prepared at 60% relative humidity in Tests C1, C2, C3, C7, and C8; however, in C2 and C3 the sliver was exposed for several weeks at 70% and 80% before passing to spinning frame at 60%. The sliver and roving were prepared at 70% relative humidity in Tests C4, C5, and C6. The drafts and twists remained unchanged throughout the tests.

From these tests it can be observed that humidity had a decided effect on the strength and uniformity of size of the yarn. Raising the relative humidity from 60% to 70% and 80%, respectively, indicates an increase in strength of 11% and 16.7%. Furthermore, it will be noted that the yarn is appreciably more uniform in size at the high humidities.

From the chart, it appears that apparently yarn spun with a moving thread board is slightly stronger than with a stationary board. This is accounted for by the greater number of end breakages with stationary board; consequently the weaker yarn is eliminated before testing. However, with the moving board, more weak places are retained in the yarn, since there are fewer ends down. At the same time, it will be noted that the size variation of the yarn is slightly greater with the moving board.

Tests C6 and C7 indicate that the yarn spun and tested at 80% is slightly stronger than yarn spun at 60% but tested at 80%. The reason for this is that yarn spun at 60% is not so permanently set as that spun at 80% and, when subjected to tests at 80%, the fibers become more pliable, so that the yarn begins to untwist and consequently becomes weaker. If a coarse yarn were used in a test similar to C7, the above results would be even more noticeable, since a greater twist would be required. The yarn size is appreciably more uniform in Test C6, where spinning and testing is done at 80%.

Although these tests were run at as high as 80% relative humidity, it does not mean that humidities as high as 80% would generally be suggested, except under special conditions which had been carefully studied beforehand.

Since tests conducted under various conditions and on various products will produce various results, only general recommendations can be made as to spinning of coarse and fine yarns. Consequently, the textile manufacturer should take all factors into consideration before attempting to decide what definite relative humidity is best for spinning a specific yarn.

Opinions of Our Opinions

Comments by other editors on Textile World editorials

Is It Really Dead, Then?

From *Greenville News*, Greenville, S. C.

IS it true, we really wonder, that the much-discussed "two-price plan" under which goods were to be sold at lower prices to citizens of the low-income classes, has been fully abandoned?

TEXTILE WORLD evidently believes it has since it sees an effort on the part of the Department of Agriculture to disclaim even the parentage of the idea. "We learn," it says in an editorial, that "shucks, there wasn't anything to it at all—just a leetle study that was being conducted. And one dispatch from Washington states that 'as a matter of fact, the study was forced upon the Department of Agriculture by the press'!"

The textile magazine apparently resents this attempt to make "the press" the goat, and insists that the record of the parentage of this brainchild be kept straight. But the chief question that interests us at the moment is whether this scheme has now actually been definitely listed among the New Deal babies that died a-borning, or whether it is still judged a promising subject for the pulmotors.

An English Viewpoint

From *Textile Weekly*, Manchester, England

OUR American contemporary, TEXTILE WORLD, recently had a leader by Douglas G. Woolf on "Can a Textile Man Make Money?" The writer admitted frankly "we don't know"; it must be confessed that this also is the attitude of many textile men in this country. President Roosevelt recently aptly termed the South's cotton problem "American economic problem No. 1." The same might be said of every country which has a cotton industry, also, as the Lancashire move to make a united approach to the Government "to do something" and the week's meetings indicate.

In proposing a way out, TEXTILE WORLD repeated a seven-point agenda for the United States industry which is equally applicable to Great Britain and the whole cotton world:

1. Guard against overproduction.
2. Improve its statistical information.
3. Hold its price structure.
4. Maintain its wage structure.
5. Improve its merchandising and sales promotion.
6. Expand its research program.
7. Modernize its plant.

Every one of these items has been stressed repeatedly here, yet while human nature remains unchanged many must confess that even these points would not adequately solve the present disturbed world situation. The truth is that the initiative has passed from businessmen to politicians, and the fundamental factors to work for improvement are now out of the control of those engaged in the textile industry. None can deny that quite a number of the above points need attention in the British textile industry, whereas quite a number of them are already in full operation, for example (2), (4) and (6).

Can A Textile Man Make Money?

From *Rayon Warp Sizing Specialist*, published by Charles B. Johnson, Paterson, N. J.

WITH interest and approval we read the editorial under this heading in a recent issue of TEXTILE WORLD.

It was also interesting to note that the editor puts plant modernization as seventh on his list of pre-requisites to doing a profitable business in textile manufacturing.

We, as manufacturers of textile machines, can at least confirm that point seven sum-up, for we know that most often those to whom we sell modern sizing equipment are most often the ones who *are* doing a profitable business. They install efficient modern machines as an incident to good management and as a result of extended research.

As the TEXTILE WORLD editor remarks, "the individual manufacturer can do much to hasten and develop" the program outlined in his seven points. These individuals who modernize their equipment are the same men who can be trusted to take a broad view of the industry's needs and do their utmost to bring about intra-industry cooperation.

A Blow to Textiles in Name of Peace

From *Bridgeport Telegram*, Bridgeport, Conn.

DOUGLAS G. WOOLF, editor of TEXTILE WORLD, writes in the December issue of that magazine a requiem for America's textile industry soon to be submerged in a flood of imports negotiated under the Hull reciprocal trade treaty pacts.

"In some quarters," writes Editor Woolf, "it is regarded as almost treasonable to criticize the trade agreement just concluded with the United Kingdom. World events of recent months have made people eager to grasp at any incentive to world peace. And these reciprocal treaties are advanced as such by their proponents.

"At the risk of treason, however, we wish again to point to a forgotten man: a manufacturer who runs a cotton mill or a woolen mill. For years he has seen his market contracting, his profit margins shrinking to less than nothing. He has paid through the nose with new taxes of every description. His wage costs have advanced steadily and as a final blow the Administration hands a slice of his business to his foreign competitors. It this man supposed to get up and cheer about it? Well, he just isn't going to do it. To him—philosophy or no philosophy—the treaty is one more blow."

We are sorry for the textile manufacturer named but we are sorrier still for the thousands of men and women employed in textile mills in New England and elsewhere who may lose their jobs when the foreign goods come in.

We are more sorry for these people simply because there are more of them. Employer and employee, manufacturer and worker, superintendent and loom-tender are all in the same fix. If the orders cease the factories shut down and all are out of luck.

We must make some little sacrifice to the boondogglers so they may pursue their happy way around the world, giving away America's trade while the greatest market in the world lies around us at home neglected. Keep it up long enough and the whole nation will be on the WPA, one happy family united by a common bond—lack of work.

Reaction to Mill-Plantation Plan

One man regards it as socialistic; another sees mutual benefit

WHEN we published the article entitled "Mill Plantation Scheme," by R. K. Whittier, in the December issue of TEXTILE WORLD, we invited opinions from readers on the plan proposed by Mr. Whittier. Below are two widely different points of view.—*Editor.*

BURLINGTON, N. C.

Editor, TEXTILE WORLD:

I have just read with considerable interest a public relations article, "Mill-Plantation Scheme" suggested as a solution of the unemployment problem appearing on page 52 of the December edition of TEXTILE WORLD.

To begin with, let me say that I am naturally a little wary of any new scheme proposed to artificially relieve unemployment. During the past five years I have seen the Government's planned economy experiment fail to relieve unemployment, or raise the standard of living for the American worker.

Mr. Whittier's proposed plan would no doubt be an interesting and noble experiment, and it may point out potentialities, but it seems to me it is too much akin to Socialist philosophy to be very successful in America, "the home of the brave and the free." It will tend to foster paternalism, which is already too prevalent among employers. It will tend to make employees more improvident—like canary birds who have been pampered so long that they are not capable of taking care of themselves. And this is an age of specialization; running a plantation is one line of endeavor, and running a textile mill is quite another. I don't think they both could be operated together, in this era of keen competition, by one individual or corporation with any marked degree of success.

Generally speaking, textile executives have too much of that possessive paternal attitude towards their labor. Instead of looking upon them as purveyors of a necessity—time and skill—as they do the dealers in raw materials or supplies, they seem to regard their labor as a kindly farmer does his livestock. They seem to think their labor is not capable of taking care of itself; that it is up to them to provide food and shelter in much the same way the farmer does for his cows. Of course, contented cows—well fed and adequately sheltered—will pay the farmer with more and better milk. Likewise contented labor will produce more and better work; but paternalism will not make contented labor. What labor wants is a steady job and a square deal—a chance to help itself.

Both employer and employee must be made to realize that they are business associates—not guardians and wards. Employees must learn that textile plants do not exist primarily to furnish them with jobs, but to supply a human need at a reasonable return on the thousands of dollars the stockholders have tied up in buildings, expensive machinery, raw material; that labor is only a means to this end; that each employee is, in reality, in business for his or her self—the business of supplying a particular kind of service to the corporation; that he or she who serves best profits most.

This gentleman speaks of dividing the profits of his proposed Mill-Plantation Corporation with the employees. Personally, I have always looked upon any form of profit sharing with employees as not only unfair to the mill owners, but unsound and more of a bribe than an incentive to greater efficiency. Only those who have furnished money to finance a business are justly entitled to profits. If I had sacrificed and saved thousands of dollars, and invested it in stocks of a corporation, I would not think I was being treated fairly if part of my returns were being handed out to employees who had not furnished one cent to finance the business, and had assumed no risk or responsibility. If the board of directors of a textile mill feel they are not paying their employees enough for the fruits of labor, then why not authorize a wage increase? This would be better understood and appreciated more by the employees.

Long years of personal observation have convinced me that the most dependable employees are those who are ambitious enough to save part of their wages, and invest it in a home, "be it ever so humble," and not the tenant farmers or chattel type—as would likely be the case under this scheme—who look meekly to their masters for credit at the company store for the necessities of life.

As I see it, the only sound solution for the "underprivileged" textile worker is to put him on his own: constantly emphasize the fact that it is up to him to take care of himself; that there will always be financial suffering for any individual who fails to live within his income; that it is just as necessary for each individual employee to struggle to build up a reserve to tide them through a "rainy day," as it is for a corporation to set aside part of its net income for future needs.

It should be remembered that the pioneer textile manufacturers of the South were of the mill-plantation type, and they have long since passed the board. Textile manufacturers of the North, who formerly furnished their employees with houses, have found it best to dispose of them to individual employees or outside interests. Today, textile manufacturers everywhere are finding it more profitable to devote their time and judgment to manufacturing and marketing textile products exclusively, instead of dividing it with the responsibilities of being fathers of large industrial families, and landlords.

JULIAN W. HUGHES

Mr. Whittier's reply—Mr. Hughes ably presents the established inertia of conventional business, thus bringing into ever greater relief the writer's plea for scientific business methods to take full advantage of the possibilities disclosed in the Mill-Plantation Scheme. Thus Mr. Hughes' textile executives, improvident employees, etc., are not to be cowed into any such paternalistic anachronism as he pictures. The methods suggested apply to given conditions and not to Mr. Hughes' nor even New England's environments, either of which would require an objectively-based setup. Consequently, the question remains, given this opportunity, which is ample to provide lower costs, higher wages, greater productivity, and self-subsistance, for the inevitable percentage of marginal producers—is business leadership competent to do this job? Let Mr. Hughes say that it is not.

—⟡—

FRANKLIN, N. H.

Editor, TEXTILE WORLD:

There has been in recent years an attempt to make it appear that the industrial workers had profited at the expense of the agricultural, therefore the AAA.

Mr. Whittier's scheme shows how the cooperation of both groups may be to their mutual advantage. It also indicates the possibility of real saving in distribution costs, which seems to be the most hopeful way to reduce prices under present high production methods.

Under the last paragraph of "The Wage Agreement" we read "but in no circumstances would the mill-plantation slacken up on either efficiency or volume production"; but under "Industry-Wide Effect" appears the admission "or, if this were not convenient, labor would have to be content with what time it could get in the mill." Will it be necessary to stop production by governmental edict when reasonable surpluses have been reached in the various industries, in order to cope with overproduction? Stoppage of agriculture did not work as anticipated.

Since labor contributes a very large and necessary part in production, why is it suspicious of profit-sharing?

WALTER A. SIMOND

Mr. Whittier's reply—Mr. Simond is interested in the inevitable change which would result from improved farm earning. The writer believes government interference with business can only delay what is inevitable and make the cost more costly. Economic pressure will operate toward higher standards and if we can set up greater economies all we ask is that natural laws be let alone.

Large-Package Spinning

Worsted ring frame capable of producing yarn on big bobbins at low cost

By JOHN EARNSHAW

LARGE-PACKAGE spinning of worsted yarns can, of course, reduce costs only when all other factors are equal. Stated as questions, those "other factors" which must be considered are, briefly, as follows:

Can large-package spindles be run at speed limits, either high or low, which will permit efficient and economical production on all counts spun? Is the spun yarn as satisfactory as that spun on other types of equipment? Can large-package spinning frames be used to spin a large variety of counts and qualities? Are such frames as good spinners as other types of equipment? What are the effects, if any, on previous or subsequent processes in manufacture?

In the writer's opinion the large-package ring spinning frame measures up to the first four requirements and gives beneficial results on all sides when considering the last question.

The accompanying table gives a fairly representative range of counts of yarn spun, taken from actual mill practice. It is interesting to mention briefly to what uses the yarns cited are put. The 12s and 16s are used single, wound on cones, for knitting plain and fancy half-hose. The 24s is used two-ply for the jersey trade and for warp yarn; also single, wound on cones, for half-hose. The 40s is used in colored mixtures, single on cones, for splicing; and two-ply, for warp, in which case it is spun white. Different twists are, of course, used for the differing purposes to which any particular count is put, but in order to save space the results shown in the table have been based on average figures.

There are also many other and widely different uses to which ring spinning equipment may be put. Among these may be mentioned, on the one hand, the spinning of hair yarns of about 1/6s count, for filling yarns for interlinings. On the other hand, the frame can also be used for spinning satisfactorily the finest of counts for the high-class dress goods and hosiery trades.

Many advantages can be achieved through use of large-package spinning equipment. First, there is the obvious fact that it enables a large package to be spun. This definitely lowers costs, not only for the actual spinning process, but for all operations following spinning.

A second advantage is that it may truthfully be said that the ring frame is all but universal in its application to worsted spinning. In this connection it should be noted that at small expense different sized sets of rings can be bought. Such a procedure gives to a plant adopting it a very wide count range, yet retains efficiency from all points of view, whatever the counts spun.

The third advantage, but by no means the least, is that of securing maximum productivity whatever the count being spun. This is based on the fact that the ring spindle can be run at almost any speed which the material being spun will stand. Thus, the only limit to speed, at least in the lower counts, is the ability of the operative satisfactorily to attend to the frame while it is running. In one plant known to the writer, this possibility is made use of so as to maintain, as far as is possible, a fixed speed for the low front rollers of the frame. This speed is 65 to 70 r.p.m. for a 4-in. roller, operating on counts up to 18s, such a speed having been found to be just about the maximum at which operatives can satisfactorily tend the frames. Consequently in that mill, up to 18s counts, the executives can depend on production in pounds being practically in inverse ratio to the counts spun. Compare this with the disadvantage of calculating production of frames on which a fixed, or nearly fixed, spindle speed must be adhered to. In the latter case, not only must the count be taken into consideration, but also the extra twist required by the finer yarns.

Disadvantages of ring spinning are few. The first is that as yet no mechanical doffing apparatus is widely available. Large-package spinning, however, largely overcomes this, since stoppages for doffing are fewer.

Second, the changing of travelers is likely to be tiresome and time consuming in a mill spinning small weights of various counts. Good management and planning can largely overcome this objection.

Third, there may also be mentioned the fact that, in building up a tube, the differing drag undergone by the ring-spun yarn is a disadvantage. Actually, it has been found in practice that this disadvantage is more theoretical than real. Yet there have been methods developed to overcome this condition in those cases where it matters.

The methods used are too long to be described in detail in this article; they take the form of driving the frame at speeds differentially controlled by the lifter motion and the actual position of the ring rail at any given time.

There are, apparently, no other objections to ring spinning of worsted yarns, and in the writer's personal experience, any small disadvantages are far outweighed by the many advantages to be gained.

In appraising results possible, the tremendous advantage of saving on later processes must not be lost sight of.

Data on Large-Package Ring-Spun Worsted Yarns

Ring size	2 in.	2½ in.
Package size	8-in. tube	9- and 10-in. tubes
Av. wt. on full bobbin	3 oz.	8 oz.
Av. doffing time	9 min.[1]	

Counts spun	R.p.m. of spindles [2]	Av. spinning time (starting to starting) 2 in. ring	Av. spinning time (starting to starting) 2½ in. ring	Production per spindle (48 hr.) 2 in. ring	Production per spindle (48 hr.) 2½ in. ring
1/12	4,500	60 min.	143 min.	9 lb.	10 lb.
1/16	5,500	87 "	215 "	6.2 "	6.7 "
1/24	6,500	159 "	409 "	3.37 "	3.5 "
1/40	7,000	354 "	not used	1.53 "	not used

[1] This is an inordinately high time, caused by an insufficiency of doffing operatives. Actual time standing for doffing, if 4 doffers are on the spot when a frame is stopped, is about 3 min. for a 140-spindle frame.

[2] Spindle speeds are averages of those used in actual practice. However, it is possible 7,000 r.p.m. would not be commensurate with best results for certain qualities of 1/40s. The other speeds are easily attainable on almost any quality which will spin satisfactorily on any other type of frame.

Mathews Mill and Village

Modern throughout, they represent highest standards of good working and living conditions

ACCORDING to modern concepts, the three major functions of industry are: (1) to provide work for a large number of persons at good pay and under pleasant working conditions, (2) to provide useful services or goods at a reasonable cost, and (3) to make a profit for the stockholders. Under some conditions, industry has another important function—to provide comfortable living quarters for its employees. The new Mathews Mill and village at Greenwood, S. C., is an outstanding example of a community in which all of these functions are recognized. Here is a modern mill equipped throughout with up-to-date machinery; a village with comfortable brick houses, churches, and recreational facilities for the employees. And the project is not in any sense an experiment. Rather, in building the new Mathews mill and erecting the village houses, James C. Self, president and treasurer of the company, is pursuing the same successful policy that he has followed for many years with his other plants at Greenwood and Ninety-Six, S. C. His experience with those projects has culminated in Mathews—the physical embodiment of his conception of the ideal mill and village.

The keynote in the construction of Mathews Mill and village is permanence of buildings and of employment. And after looking over the accompanying pictures, one can easily see how this is true and why labor turnover among the 1,700 employees is practically zero. Innumerable employees have been connected with the company for 25 to 40 years. After all, why should Mrs. J. A. Shannon, for example, want to move away from the community where she has seven unmarried children living with her, earning a total of more than $150 a week? Take another random case. Let us look at Rid Tolbert, colored man, who fired boilers for the company for 24 years. During that entire period he was late for work only once; his automobile stalled. Eventually automatic stokers came into use, but Rid did not lose his job. A place was found for him cleaning machinery.

The pictures of the village speak for themselves. Probably 70% of the employees live in company-owned houses, which means that the total population of the village is approximately 2,500 persons. The remainder of the workers who depend on the mill for a livelihood reside within a radius of fifteen miles. Most of these commuters live on land which they own and farm during their leisure time. The management encourages home ownership and will assist any employee in building a home if he indicates that he sincerely wants to become a property owner. The chief aim of the housing program is to give all employees pleasant living conditions when away from the job. "The lowest-paid worker in my mill is entitled to a tiled bathroom," declares Mr. Self.

Captions accompanying the photographs pretty well tell the story of Mathews Mill and its development; yet there are a few highlights which might be emphasized here. With reference to the mill proper, there are two facts that impress one upon entering the plant. The first thing is that all of the manufacturing departments, from opening to inspecting, are extremely clean. The hard maple flooring is waxed and polished exactly as one would treat a fine flooring in the home. Water never touches it to cause rotting or splintering, as is common in some plants. The latest mechanical cleaning devices are used throughout the plant, and these keep lint and dust to a minimum. The second major impression one receives on entering the plant is that nothing is

Fig. 1. Mathews Mill is a four-story U-shaped building, constructed according to the most modern engineering principles. Permanence is the keynote here, as in the case of the houses in the village. Every timber in the plant is of heart pine, brought from Florida. Most of the other building materials, including all of the bricks, were produced in Greenwood County. Note the large amount of window space and the air-conditioning ducts. A surfaced drive is being built entirely around the plant so that no mud will be tracked inside.

Fig. 2. A scene in the Mathews Mill village. The majority of the 350 houses are new from the ground up, and are complete with tiled roof, tiled front and back porches, tiled bath, and hardwood floors. The older houses are being completely remodeled and brick veneered so that they are indistinguishable in appearance from the new ones. Houses are rented to employees at the rate of 25c a room per week, or $5 a month for a five-room house. All streets in the village are being surfaced, there is an underground drainage system in use. As soon as the Mathews village is completed, a similar program of revamping will be begun in the Greenwood and Ninety-Six villages.

crowded. There is plenty of space between machines to move around in freely, and the walking alleys are wider than usual. This should result in a lower accident-frequency rate.

Mathews Mill is actually two separate mills with the exception of certain overlapping departments. The original mill, which Mr. Self acquired in 1930, had around 40,000 spindles at the time he took over the properties. This older part of the plant, one wing of the present building, is now utilized almost exclusively in the manufacture of filling. Machinery here has been completely overhauled, but generally is not so new as that of the warp mill, where most of the accompanying pictures were made. With the exception of the reworked cards and certain minor equipment, machinery in the warp mill is new throughout and represents the latest developments in high-speed equipment. The preparatory machinery was all furnished by Saco-Lowell Shops, spooling and warping is Barber-Colman, looms are Draper Model-X, cloth room is Curtis & Marble. The majority of motors purchased for the new mill are Diehl, mounted on Rockwood bases. Air-conditioning is Parks-Cramer.

Fig. 3. This living room is typical of that which can be found in any house in the Mathews Mill village. Note the hardwood floor, clean plastered walls and attractive fireplace. As mentioned elsewhere, all of these houses either have, or very soon will have, tiled baths, tiled porch floors, tiled roofs, and copper pipes.

Fig. 4. The women get a break at Mathews in more ways than one. For example, there is a free wet-wash laundry service available to every person employed at Greenwood, Ninety-Six, and Mathews mills. This is a particular hobby of Mr. Self's and serves several purposes. In the first place, the strain of washing clothes for a family is removed from the shoulders of the housewives and permits them to lead more normal healthy lives. Second, the appearance of the village is not marred by lines of wash hanging in the yards to dry. And, finally, plenty of clean clothes insures the personal cleanliness of each employee. The above picture shows the resident of one of the houses receiving his laundry.

Fig. 5. The Callie Self Memorial Baptist Church, a replica of the Ninety-Six church shown at left, is being erected at Mathews Mill in honor of Mr. Self's mother, who for many years took an active part in the religious life of the community. The building will be complete with auditorium, Sunday School rooms, recreation halls, and a nursery for babies whose mothers are attending services. There are a number of other churches in each community available for use by the residents.

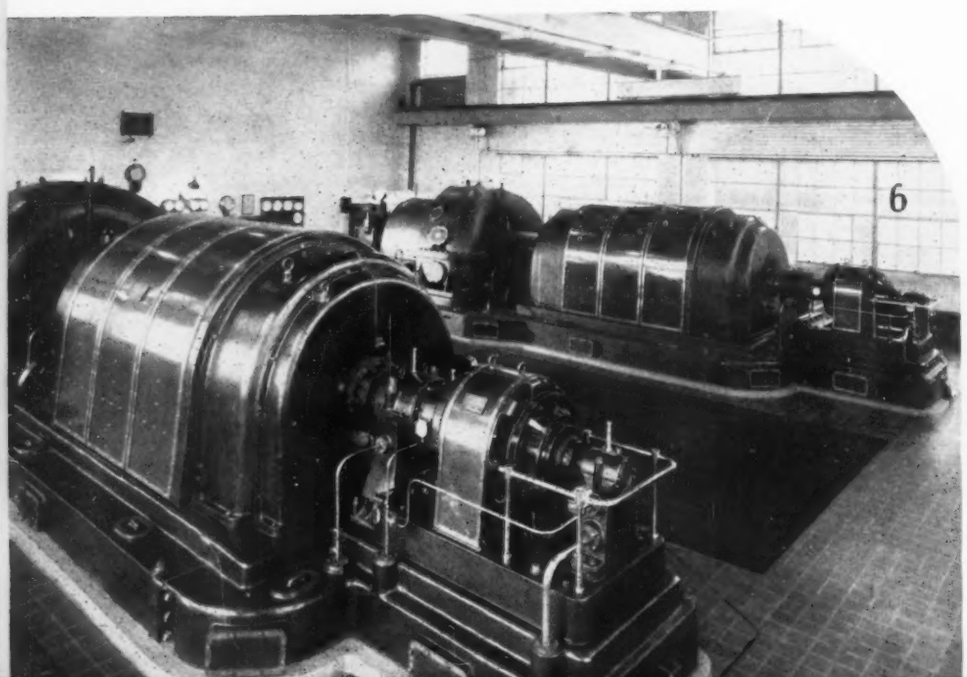
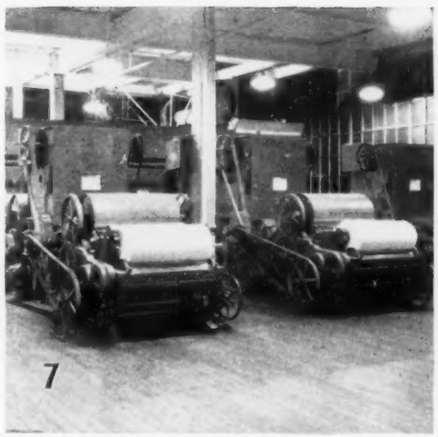
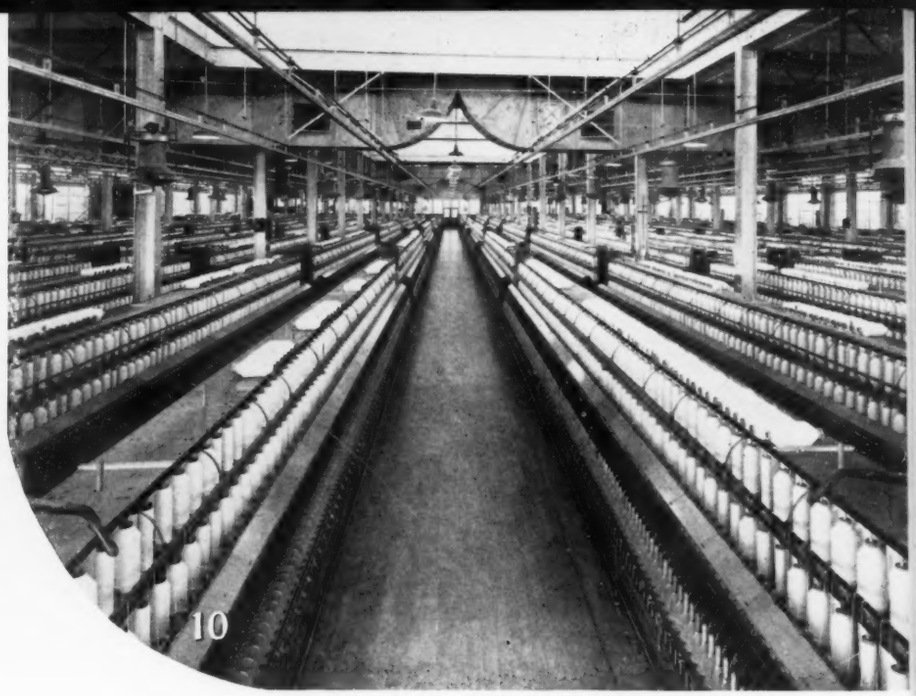


Fig. 6. Power is generated by two turbine-generators furnished by Bellis & Marcom Works, of England. Auxiliary equipment is of American and English makes. Output is 15,625 kva., voltage is 13,800, speed is 3,600 r.p.m. Generators are three-phase, 60-cycle. General Electric control board is in use. Safety of operatives was carefully considered when this power station was planned. For example, switches are inclosed in a steel cubicle so that the machines are operated by remote control. Workers are called to the telephone (located in a sound-proof booth) or office by means of a siren which can be heard above the noise of the machinery. In the boiler room are two Babcock & Wilcox integral-furnace boilers equipped with B & W superheaters, pulverizers, burning equipment, and Diamond soot blowers; one B & W economizer serves both boilers. Either coal or oil can be used as a source of heat. Output of steam for both power and process work is 125,000 lb. per hour at 400-lb. pressure and 725° F. A feature of the boiler room is a new Leeds & Northrup conductivity meter, known as Micromax, which records the purity of the condensate at six different locations in the steam system. Boilers are equipped with Bailey combustion-control instruments. The exterior of the power plant is shown on the cover of TEXTILE WORLD. Completed in 1936 the power plant is comparable with the finest municipal units. There are two complete power sources of 15,625 kva., one for emergency or alternate use. Greenwood Cotton Mill consumes 2,500 kw., Ninety-Six Cotton Mill uses 2,500 kw., and Mathews over 4,500 kw. For transmission of current over





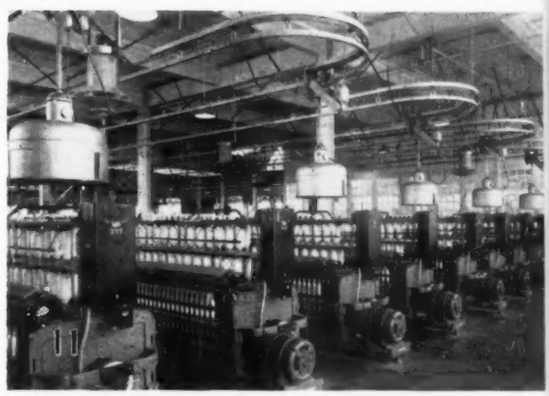
nine miles of wire to Ninety-Six from Mathews, voltage is stepped up from 13,800 to 22,000 volts, and then down to 600 volts for consumption. These capacities include the power used by the various villages. Note the two round silos which are used to store coal. Each is 65 ft. high and holds 450 tons of coal. Coal is loaded into these storage bins by means of a bucket conveyor, via a separator which removes ferrous metal by means of magnets. An automatic switch stops the conveyors when the silo is full. The coal is weighed before it enters the pulverizer. Not in operation when the above picture was made, are two 42-in. spray pipes which lead to the nearby spray pond.

Fig. 7. There are two picker rooms, each containing four one-process Saco-Lowell pickers equipped with cleaning and blending reserves. Production averages 300 to 350 lb. per picker. Cotton is brought into this room by suction from the opening room, which is located some distance away. Opening equipment is also Saco-Lowell; each unit consists of four hoppers feeding on to a mixing feed table followed by a vertical and a lattice opener. There are two of these complete units in operation, each of which mixes from 20 to 30 bales at the time. In the above picture note the air filters in the extreme background and the cleanliness of the room. The pickers are fed by Saco-Lowell rake-type distributors.

Fig. 8. In the picture of the card room can be seen several of the fourteen heads of the new Saco-Lowell controlled-draft (five-roll) drawing. This type of drawing necessitates the use of the sliver lapping machines, which can be seen just behind the drawing frames. There are some 300 rebuilt Saco-Lowell cards in this room. Diehl motors are used to drive the overhead shafting which operates the cards.

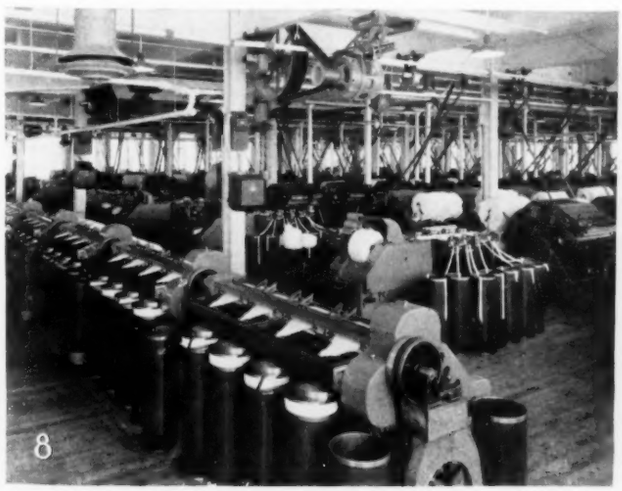
Fig. 9. All roving equipment is two-process Saco-Lowell long-draft. The first process is carried out by 10 x 5 Model-J controlled-draft slubbers. The intermediates are 8 x 4 conventional-draft frames. The slubbers are designed to operate at a spindle speed of 800 r.p.m.; the intermediates, at 1,000 r.p.m. Parks-Cramer High Duty humidifiers and Modine unit heaters are used to provide correct atmospheric conditions.

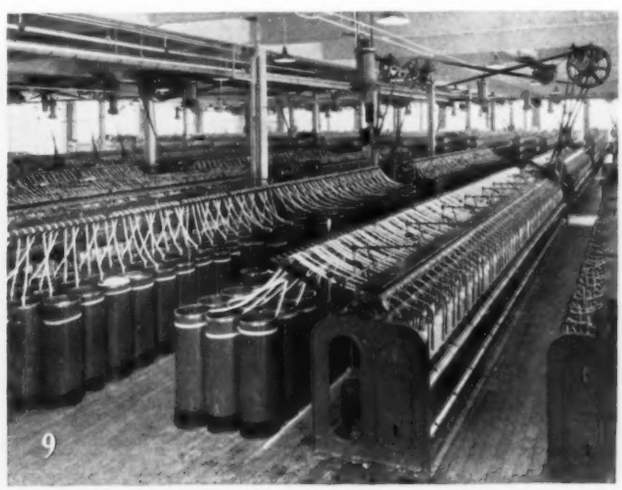
Fig. 10. There are approximately 90,000 spindles in the plant. Over half of these are the new Saco-Lowell long-draft frames equipped with Saco-Lowell ball-bearing spindles and wide inner-ring Fafnir cylinder bearings. The remainder of the spinning, located in the older part of the mill, is Saco-Lowell and Fales & Jenks changed over to Saco-Lowell long-draft. In the warp mill, shown above, rings are $1\frac{1}{8}$ in.; traverse is $7\frac{1}{4}$ in.; gage is $3\frac{1}{4}$. Spindle speed on these frames is higher than normal, being 10,500 r.p.m. on 30s warp. In the original building, the filling frames are equipped with $\frac{3}{8}$-in. rings. Traverse is $6\frac{1}{2}$ in.; gage is $2\frac{3}{4}$.

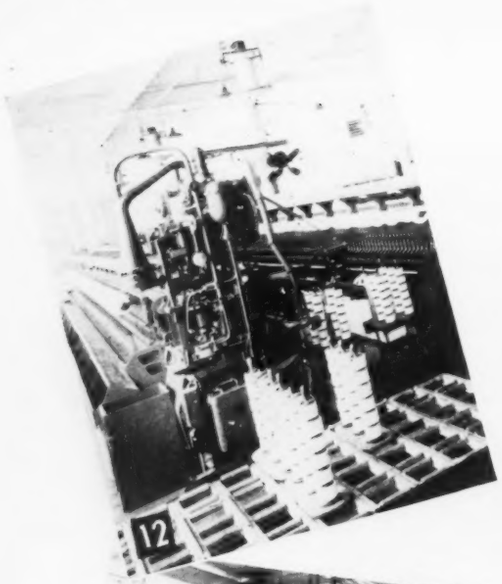


Parks-Cramer Airchanger and Type HHD High Duty Humidifiers with Psychrostat automatic controls maintain proper atmospheric conditions.

Fig. 11. Another view in spinning room showing how frames are driven by 10-hp. Diehl motors mounted on Rockwood bases with demountable rim pulleys. There are 800 of these open-type, lint-free motors used in the mill. Overhead can be seen a number of American Mono-Rail traveling cleaners. The frames are equipped with Cutler-Hammer control boxes. Armstrong cork is used on all top rolls in the spinning room as well as in the card room.







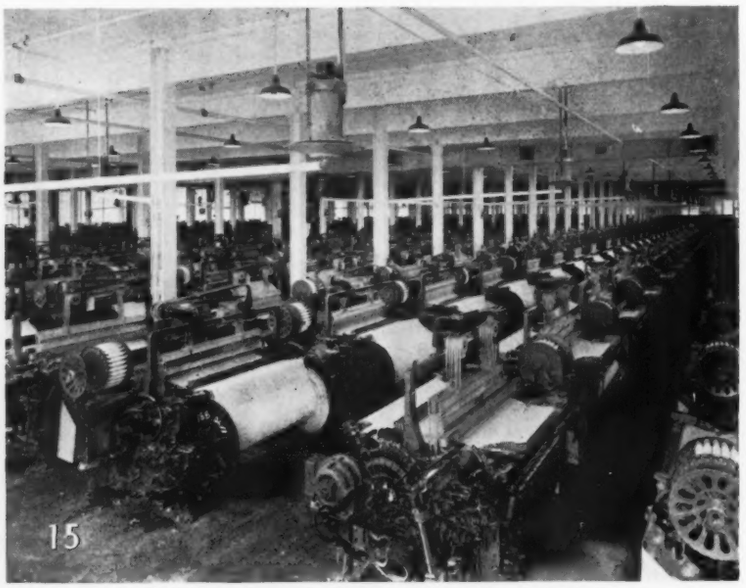


Fig. 12. The spooler room, shown at the left, contains Barber-Colman spoolers of the latest type, which build the package on a small Bakelite cylinder known commercially as a Cheese-Core sleeve. The sleeves are handled on tridents which contain eighteen packages. The spoolers operate at 1,200 yd. per min. on 30s warp yarn. These machines, as well as the warpers, handle the entire output of warp yarn for the mill. Each spooler is equipped with one 3-hp. General Electric motor which drives the tying mechanism, and with two 5-hp. motors of the same make which drive the winding drums.

Fig. 13. These Barber-Colman super-speed warpers operate at a speed of 900 yd. per min. Two of them are equipped with the new mechanical clutch and hydraulic brake. The creels hold 936 packages, but only 432 ends are being warped in this installation, as the device is arranged to creel while the beam is being wound. All creels are equipped with electric drop-wire stop motion. The warpers are driven by 10-hp. General Electric motors. Other equipment in this room includes Toledo scales and Modine unit heaters.

Fig. 14. The slasher room contains two of the newest type high-speed Saco-Lowell slashers, which are designed to operate at speeds varying from 40 to 100 yd. per min. These machines, which have been previously described in detail in TEXTILE WORLD, are equipped with four 5-ft. cylinders and Transitorq drive. The drive is variable-speed and is designed to maintain a constant tension on the yarn at all times without use of hand friction or manual effort of any sort. The creel, equipped with air brakes, is mounted on wheels so that it can be pulled to one side as soon as the warp runs out. Another creel with full beams is immediately pushed into place, so that time lost during the change is reduced to a minimum. There are metal rails on the floor which serve as tracks for the creel. Temperature of cylinders, size box, and cooking kettle are automatically controlled by means of Taylor instruments. Yardage is measured with Veeder-Root counters. Slasher hood is of steel. The room is heated by Modine unit heaters. In addition, there are four other older-model slashers in use at Matthews.

Fig. 15. There are four separate weave sheds in Mathews Mill. The newer part of the mill contains Draper Model-X high-speed looms. The majority of these looms are equipped with Diehl's new Uni-Tex loom motor with the switch built into the yoke housing. The remaining looms are Model-E. Incandescent lighting arrangement and Parks-Cramer Type HDS High Duty humidifiers can be seen in the picture. Waltham pick counters are used on the new looms.

Fig. 16. The major pieces of cloth room equipment were furnished by Curtis & Marble Machine Co. and consist of four new sewing machines and scrays, four revolver-type shears driven by Diehl motors and operating at 125 yd. per min., fifteen inspecting machines which operate at 80 yd. per min., and several folders which handle 130 yd. per min. No. 25 Railway sewing and rolling machines are used to put light-weight goods on rolls at 200 yd. per min. The inspecting machines are placed in front of large windows where natural daylight is utilized, supplemented by Cooper-Hewitt lamps of the latest type which can be seen suspended above the inspecting boards.

(The attractive view of the mill and power plant shown this month on our front cover, together with all of the other pictures illustrating this article, were taken by W. B. Coxe, Greenville, S. C.)

THE OVERSEERS' CORNER

TOBACCO CHEWING IN THE MILL

A Pete and Bill Discussion

"YOU too!" growled Pete, directing a withering glance at Bill. Bill looked up and asked amiably, "What now?" He was used to Pete's occasional temperamental outbursts when something was troubling him.

"Tobacco chewing," said Pete. "You're no better than the worst of them in the mill. The only difference is that you have a private brass cuspidor in your office."

"That's right," said Bill, letting fly at his private receptacle. "What's wrong with a man chewing a little tobacco now and then? Haven't gone high hat, have you, Pete?"

"No, I haven't gone high hat. I don't care what you and the rest of the addicts do away from the mill. But it certainly is hard on the floors and corners of the rooms. I'm thinking about posting an order in my department forbidding the use of the filthy stuff."

"You'd be making a mistake, son," admonished Bill. "Two-thirds of the men in your department have been chewing tobacco all of their adult lives. And you can't reform them this late."

"But I don't want to reform them. I just want to keep the room clean! We don't let them smoke in the mill any more. Why can't we stop them from chewing as well?"

"Well," Bill said, "we did pretty well stopping them from smoking although a few still slip off and do it. But we passed the buck to the insurance company. The help knows that a rule against chewing would not be a safety measure."

"You may be right, Bill, but nevertheless I'm going to post a notice prohibiting chewing on the job."

"It's your funeral. But before you go, take a look at the corners of my rooms. You'll see that they have been painted white, and that the receptacles for tobacco juice are cardboard cartons filled with sawdust and mounted on 3-ft. stands. The expectorator aims carefully at these boxes because he does not want to miss and splash the pretty white paint. Once a week fresh boxes of sawdust are placed on the stands."

Ping! sounded the shiny brass cuspidor as Pete marched out of Bill's office.

Should employees be allowed to chew tobacco while on the job?

Letters From Readers

Purchasing Agent Necessary

("Who Should Buy," Pete & Bill, September, 1938)

Editor, Overseer's Corner:

I fear that Bill is in much the same position as was the old lady who, when asked how she liked the new minister, replied, "He is not so hot as a preacher, but he knows all the news." Bill does not, I believe, resent the purchasing agent so much as he does the fact that it is breaking into his established routine. He seems to lose sight of the fact that in this day of keen competition and declining profits that the "money jugglers," as he calls them, are a very important part of any live organization. The few cents that they are able to save often spells the difference between failure and profit. I fully agree with Pete that the superintendent has more important things to do than listen to the stories of "old man Brown" so let the purchasing agent listen to the stories while the super and the overseers devote their time to more important things.—F. G. D.

(Ohio)

Prepare Discussion Before Conference

("Overseers' Meetings," Pete & Bill, December, 1938)

Editor, Overseer's Corner:

Many years of conference experiences have left me with the distinct feeling that very brief and once-a-week conferences are about the real need. One stiff rule should be that all coming to the conference have their memos for discussion all briefly written. Nothing should be brought up in conference that can be discussed and taken care of outside. I agree thoroughly with Bill that much time is wasted. And the superintendent must be a good leader to keep all to the point and yet cram in things of real interest. To that end, when one has something that should be brought up at the next conference, a memo to those concerned should be given to them early so that the parties can discuss it before the meeting. In this way they can be prepared to reach a conclusion when the conference is called. —C. H. W.

(New Hampshire)

Work Distribution Sometimes Unfair

Editor, Overseers' Corner:

In many firms there is much friction among employees; indirectly or directly, those responsible are the heads who distribute the work. What I mean to point out is that there is an *equal* distribution of salary, but *unequal* distribution of work. If those who are overburdened want to take their complaints directly to the boss, there is always the possibility of being fired, of being numbered among the grouches, and being looked upon as one who wants to dodge work in general. Does it seem useless for the employees to voice their complaints among themselves, or write out a petition and go in a body to place their difficulties before the foreman

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York.

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or the chief executive? In my opinion those who have the name of being disgruntled workers, are merely those who, like the willing horses, get all the work, and I for one would like to find a solution of it discussed in your corner. G. McARDLE
(Pennsylvania)

Time Out for Relaxation

(Relaxation, Pete & Bill, December, 1938)

Editor, Overseer's Corner:

Fatigue is one of the greatest enemies that the financial interests of the company have to fight. Every worker should be tired at quitting time, but there should be no excessive tiredness until then, for fatigue means slackening of production. To stop an operator from having a meal interval, unless he is up with his work, only increases his fatigue, makes him "all rushed and nervy" and holds up production still more. His nervousness starts a ripple among other workers. Some mills allow two minutes relaxation at the stroke of each hour. Breathers we all must have, and Nature prompts us at her time which may by no means coincide with the clock.

During the last year or two I have been in England. And I have been impressed by the animation and pep responding to the refreshment system now employed in most British plants. During the middle of the morning and afternoon a light lunch trolley is wheeled around each department. For 2c., a cup of tea, coffee or a cookie can be purchased. There is no stopping to partake of this refreshment, but merely a slackening for a few minutes. The worker not only secures some relaxation but also a livener which gives him pep. Only light refreshment is sold, which is far better than the heavy, torpor-producing sandwiches which the workers so often munch throughout the morning in some mills. —ALFRED LAYZELL
(London, England)

Do Such Conditions Exist?

[Editor's Note—*The following rather unusual letter came across our desk recently. We know that no such condition exists in the vast majority of textile mills. But if it is true in even one mill, the whole industry may suffer as a result. Comments would be gladly received.*]

"One cause of no dividends being paid is this: In one of a chain of mills that I work in the overseers are incompetent and get their jobs through 'pull'. They are not competent to draft a frame or find a gear. In making a change, they try gear after gear until they come somewhere near right. If any bad work comes back, it is put in the firebox by orders from the superintendent to cover up his son, who is foreman. Large cones of rayon, roving—bobbins and all—are burned; and the fireman must keep quiet or he will lose his job. Some foremen have a store, and the help in that department must buy some commodity from that store or else it is just too bad for them. Seven out of ten bosses are supplied with edibles for their tables by donors who can make bad work and not have a word said about it. For if a boss discharges them, they will go to the office and show him up. But before that happens, he passes the buck to another shift and that foreman is demoted or fired. Who is to blame for no dividends? If you print this don't use my name as I would lose my job."

—AN OPERATIVE'S VIEW

Safety for Slasher Tender

The safe slasher tender avoids injury around his machine by doing the following:

1. He examines his machines when he starts to work to see that all guards are in place and everything working properly. He reports all things that need repair to his second hand or fixer.
2. Before starting any machine, he always sees that no one is working on it.
3. He avoids oiling, adjusting, or repairing any machinery that is in motion.
4. He is particularly careful when working around belts. He uses a stick to shift moving belts—not his hands.
5. He avoids wearing loose clothing, for he knows it is dangerous.
6. He uses suitable chain falls or hoists to get the beams into the slasher and is careful in handling the full and empty beams, so that they will not slip out and fall and maybe injure himself.
7. In cutting laps at back of slasher, he always runs the slasher at slow speed. He carefully maintains the steam control valve, safety valve, and vacuum breaker on the cylinder slashers.
8. If lifting levers are provided, he uses them for lifting squeezer rolls in size box.
9. He knows that on the front of the slasher, a guard should be around the drive belt and also across the open nip of the draw roll. He sees that the speed gears are guarded so that it will be impossible to get caught in them.
10. When changing the separator rods, he is careful that they do not get caught in belts or wheels.
11. He sees that the control levers of the slasher shall be connected to a horizontal bar or treadle located not more than 69 in. above the floor to control the operation from any point.
12. He is careful in boiling size and does not stand in front of kettle when boiling. If kettles boil over, he cuts off main steam valve. He never opens steam valves on kettles and leaves them.
13. He watches where he is putting his hands at all times. When necessary to open and close doors of kettles (or lift lids) in which dye-liquor is at or near boiling point, he stands back and uses a stick to prevent being scalded.
14. He keeps the floor around his machines free of bobbins, waste, or any other unnecessary material.
15. He keeps up with his work, watches where he is going, and avoids hurrying, for he does not want to injure himself or others.
16. He keeps his mind on his work and reports all unsafe conditions or practices to his overseer.

—National Safety Council

Regular Overseer Meetings

Are backbone of foremanship development program

By LYDIA A. SCHWELLENBERG
Botany Worsted Mills

CERTAIN fundamentals of foremanship are common to all industries, and apply alike. The major functions of foreman all have a tendency to bear upon the same principles. Local and specific needs should be studied so that the fundamental principles may be soundly applied, with, in some instances, a difference in emphasis, depending upon the nature of the industry.

The first step in organizing a program of foremanship training and development should be a discussion of the proposition with the executive controlling the policies of the concern. The idea should be sold to him first. At the same time, his ideas and suggestions should be gathered and used in carrying out the whole plan. However, it is desirable to obtain the viewpoint and ideas of as many people as possible in order to take advantage of the widest range of experience. It is well to remember that foremen are mature men with experience, and detest the idea of making these discussions resemble a school class. The manager should dignify the movement, therefore, as something bigger and broader than schoolroom work.

Meetings

Meetings should be held at regular intervals. But it is not considered a good policy to draw a meeting into too lengthy a discussion, for foremen become very restive, as a rule, when

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meetings are continued too long. Meetings should last about one hour and should have a definite starting and definite closing time. All meetings should be started promptly and closed promptly. It is a bad mistake to allow a discussion to drag out indefinitely.

In order to create the proper spirit of cooperation, a most appropriate time to hold the meeting is during business hours. Held on company time, such meetings become a regular part of the foreman's job.

The meetings should be carried on in an informal manner. There should be no disposition on the part of the leader to monopolize the meetings, nor to have more than his share in the discussions. It should not be designed as a "course", but rather as a systematic means whereby the foremen can get together and exchange ideas and experiences and help each other in arriving at sound principles.

In order to obtain the best results, the foremen should be divided into relatively small groups. When a group is small, everyone has a better opportunity to express himself, and it is much easier to keep the meetings informal. In a large group, it is frequently noticed that the bolder type of men and the leader do the talking throughout the entire lecture period, while the shy person, who probably has very good if not better ideas, is not given an opportunity to express himself. On the other hand, if the group is too small, the exchange of ideas will not be wide enough to satisfactorily cover all the points which should be brought up for discussion.

The Discussion Leader

Careful consideration should be given to the real function of the discussion leader. It is his duty to serve in the capacity of chairman. The success of the discussion depends entirely upon the manner in which the leader conducts the discussions. As chairman of the meetings, he should keep the discussion under control and see that it does not get off the subject. A great many discussions fail when a group of men spend too much time discussing a trivial matter. As soon as a member expresses himself in anywhere near the desired direction, the leader should take advantage of the opportunity to give the man credit for having conceived the idea and then elaborate upon it so that a clear presentation is given the group.

Topics for Consideration

For the purpose of presentation, the subjects to be covered in foremanship development might be divided into a number of different functions:

1. *Handling Men:* maintaining discipline, how to give orders, keeping promises, how to secure and use suggestions, self-management in handling men.

2. *Getting Out the Work:* factors in getting out the work, planning the work, keeping an orderly department, improving methods, keeping tools and equipment in shape.

3. *Keeping Quality Up to Standard:* quality and the cost of production, how a foreman can get quality work, teaching workers to do quality work, how working conditions affect quality, the cost of poor quality.

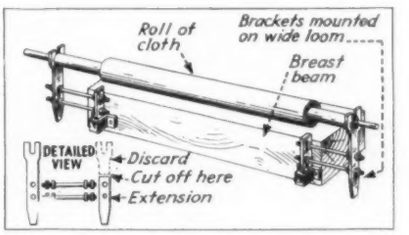
4. *Carrying Out Company Plans and Policies:* the foreman as management's representative, putting new company ideas to work, interdepartmental cooperation, representing men to the management, following employment regulation.

5. *Guarding Safety and Health:* causes of accidents, safety as a factor in production, enforcing safety regulations, what can foremen do to prevent sickness, reducing fatigue.

6. *Developing Executive Ability:* qualities of a shop executive, taking responsibility, general knowledge of factors in production, cooperation with all around him, getting the company's viewpoint.

In order to preserve the more important parts of the discussion, it is proposed that a brief summary be drawn up (and possibly mimeographed) containing the important conclusions and the fundamental principles agreed upon. These summaries make it possible for the foreman to review quickly the important points of the discussion. In the case of an unavoidable absence, the summaries are helpful in supplying the absentee with the important points of the discussion, and he can thus keep up to the minute on group proceedings.

Overseers' Practical Helps



Piece-roll bracket can be adjusted to fit wide or narrow looms

Adjustable Brackets For Piece Rolls

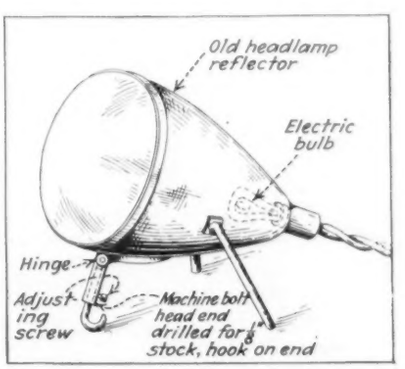
Some mills have different width looms, requiring different length piece rollers. In lining up these looms more than one size loom may be in the same weaver-set; for instance, a weaver may have a 50-in. loom, a 54-in. loom, and perhaps a 56-in. loom in his set. This arrangement may prove feasible due to the cloth being woven, but at times it can also cause a great deal of unnecessary trouble. When weavers have to remove a finished piece of cloth from the loom, they will pick up whatever rollers are available—often the wrong size. To overcome this confusion, adjustable brackets can be made so as to fit three different loom widths from the one set of brackets.

Two brackets are required for each loom, cut in the manner shown, and bolted together. When used with a narrow loom, the brackets are in position with the extension on the outside. When used with a wide loom, the short extension is on the inside. For the medium width loom, one is out and the other is on the inside. The brackets can be made so a wide loom with 66-in. reed space will require the same brackets as a 50-in.-reed-space loom. Adjustable brackets should be always kept in one place (preferably at the loomfixer's bench) and should be returned after each use.

H. E. W.
(*Berwick, Pa.*)

Extension Light from Old Auto Headlamps

The average shop mechanic has an extension light for use in dark corners, but very few have ever made any improvements on such lights. The



Extension light can be placed flat or hung from machine part

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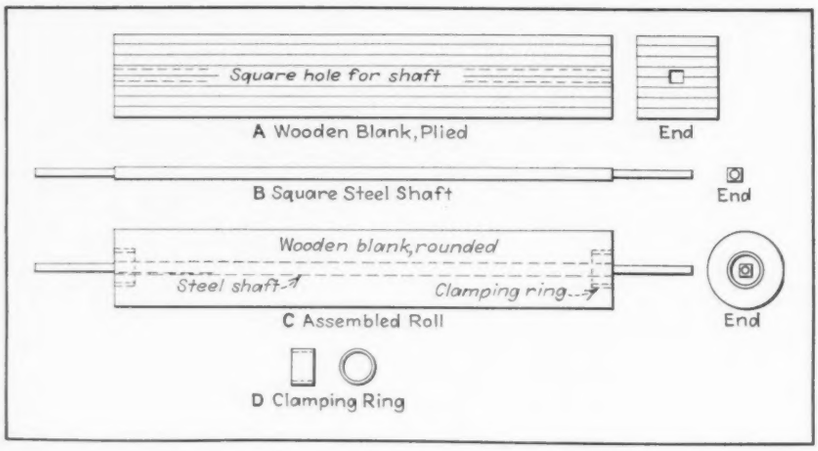

Parts of carrier roll, and assembled unit

result is that proper illumination for easier repairing is not secured. The suggestions mentioned herein may be helpful, but can no doubt be improved upon according to local conditions.

The sketch shows a spotlight reflector which can be secured from an automobile graveyard for a few cents. A metal light socket is fashioned to fit into the reflector base. The glass lens is removed, and the three short legs shown are fastened in place. The front leg can be raised or lowered, so as to permit the light to be cast on the object either from a high or low position. This same leg has a hook fastened on its foot, so the reflector can be hung upon parts of the machinery under repair. The two rear legs are made from stove bolts, bolted securely inside and outside the reflector. The heads of the bolts are cut down to an edge to prevent slipping.

When in use, the reflector is placed on the floor, or hooked upon some object so as to spot the light directly on the part being repaired. It is particularly helpful when using hammers or sledges, as the light and glare are kept from the eyes. The glass lens, which is replaced after work is completed, protects the light bulb from flying slivers. —W. E. H.

Building Carrier Rolls

Carrier rolls, scutcher drums, scray drums, and dampener drums constructed as described below have been found quite sturdy and dependable. In fact, long use of rolls and drums made this way has demonstrated their superiority over the conventional roll with short gudgeons forced into each end. It is true that rolls having a shaft extending entirely through them will weigh more than those with short gudgeons in the ends, but the additional weight has been found advantageous for rolls used as riders to hold fabrics closely in contact with the pulling drums. When used for other purposes, disadvantages due to extra weight are so slight as to be negligible.

The first steps in making a roll as illustrated is to construct wooden blank A of plies cemented together in a press with a good grade of waterproof glue. The blank is plied in order to get the square hole through center of length. This hole is formed by grooving the center plies on one face of each so as to form a square hole when they are put together. Note end view of A. After the blank is cemented, it is held under pressure until the glue is thoroughly dry. Then shaft B, which is made from square steel key stock, is pushed into place as shown in C. Shaft B is not always turned on its ends before pushing into A. If the size is sufficient to permit the whole assembly to be carried on lathe centers, it has been found possible to get a truer roll if the shaft ends are turned while the assembly is in lathe for finishing off the blank to round or cylinderical shape. Where the key stock is small, it is better to turn its journals before pushing into wooden roll blank.

D shows the end clamping rings, which are usually made from standard steel pipe cut off in pieces to desired length of 2 to 4 in., depending upon size of roll to be made. To make these clamps tighten the wood upon the square shaft, a groove is turned into each end of the wooden blank to a depth sufficient to receive the clamp ring and yet permit none of its length to project outward from the wooden body. This groove is made with an outside diameter the same as the outside diameter of the clamp ring, but with an inside diameter slightly larger than that of the clamp ring. It will readily be seen that forcing the ring into this groove will compress that part of the wooden roll body encircled by the ring, thus squeezing it tightly on the square shaft. End view of C shows ring in place.

Rolls are made from cypress or maple, depending upon the service intended. Other woods may be used where the service indicates their use to be economical and dependable. Incidentally, the original design of this type of roll incorporated use of wooden dowels dipped in glue and driven into holes bored to receive them after the plies were glued together, but use of the finished rolls resulted in the surface wearing more rapidly than the dowels and leaving their ends standing out. This interfered with smooth and satisfactory functioning, especially where drums and rider rolls ran together, one atop the other. It has been shown by experience that such dowels are unnecessary. H. H. I.

South Carolina

Questions and Answers

Cone-Winding Rayon Yarns

Technical Editor:

Enclosed you will find two swatches of 300-den. rayon, dyed developed Royal. Both samples are of the same brand. We are finding difficulty in making perfect cones from the lot containing the red marker. The yarn appears to be very slippery and will not form a good traverse on the cones. Our dyeing department informs us that both lots have been dyed and treated in the same manner. Will you please inform us just how to overcome the above condition in the coning operation, also what the cause may be?

(8525)

Since humidity and moisture are so important in obtaining the best wound rayon cones it would be wise to allow yarn from both batches to condition together and then check their relative coning properties. You should also check the condition of your tensioning mechanism, since this plays such a big part—if either oil or

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lint accumulates upon its running quality would be affected.

A constant relative humidity of 55% is generally considered best for uniform coning results. If possible, yarn should be allowed to remain in this conditioned atmosphere for two or more hours before coning.

As a test to determine whether the trouble is in the machine or the yarn, try both yarns on a spindle that is giving satisfactory results on one.

Sizes of Children's Socks

Technical Editor:

Kindly send us a table of equivalents of sizes of anklets and socks for children. We wish to know the equivalents in inches of each size of the American numeration and also, if possible, the equivalents of the European numeration. *(8616)*

As the wording of the inquiry is rather vague, we are unable to tell just what you have in mind by the term "American numeration" as compared with "European numeration." However, we believe that possibly the information desired is in regard to the specifications of machines in various gages for making different sizes of anklets and socks for children. If this is the case, the range of sizes with machine specifications would be as follows:

Hose Size	48 gage
3–5	2¼ in. 140 N.
5½–6½	2½ in. 156 N.
7–8	2¾ in. 172 N.
8½–10	3 in. 188 N.

Hose size	54 gage
3–5	2¼ in. 154 N.
5½–6½	2½ in. 172 N.
7–8	2¾ in. 188 N.
8½–10	3 in. 206 N.

Hose Size	70 gage
3–4½	2 in. 160 N.
5–6½	2¼ in. 180 N.
7–8½	2½ in. 200 N.
9–9½	2¾ in. 220 N.
10–10½	3 in. 240 N.

Crease in Tie Fabrics

Technical Editor:

Inclosed you will find two samples of rayon tie goods. The mill has been weaving this pattern for about two years but during the past five months the goods has been coming in with a very apparent crease in the satin stripe only. Upon measurement, we find the crease to appear every 1¼ yd. That is specifically the case with regard to sample A. As for sample B, besides having the crease in the satin stripe, that stripe has been weaving up with a very wavy appearance.

The yarn used was 100-denier warp and 150-denier filling. There are 160 ends per in. to ground weave, 240 ends per in. in the satin stripe, and 60 picks per in. This applies to both samples. The goods was woven 48 in. in width with a doupe in the center dividing the cloth into two 24-in. pieces.

Your help in this matter will be greatly appreciated. *(8504)*

Examination of the two samples indicates that the crease is probably due to some defect in the take-up motion. We note that just before the crease appears, there is a slight barre effect, indicating friction at some point. It is possible also that the warp beam is at fault, as some beam flanges measure exactly 1¼ yd. We feel sure that with these suggestions the mill will be able to overcome this defect.

The waviness may be due to any one of a number of conditions, such as improper tension in warping, beaming, or slashing; improper lining up of the satin and the ground beam; the sand roll slipping; or improper let-off tension. Again, waviness is often caused by improper matching of the pattern sets; for example, if one side of the pattern has more ends per inch on satin than the other half, it is very difficult to adjust the tension properly. By checking these points, the mill should be able to find the exact cause of the waviness and then take steps to rectify it.

Spots on Cotton Fabric

Technical Editor:

Attached is sample of a slub cloth on which the finishing company has repeatedly had trouble when bleaching. These goods continually come up with a colored spot after they are bleached. We would appreciate it if you could give us the cause and any necessary handling to prevent this. We have put an arrow next to some of the spots, as we tested these spots with Zonite. *(8566)*

The colored spots are due to a bluish violet dye. It resembles a dye which is known as a methyl violet type. This color is used in making indelible inks, typewriter ribbons, bleacher's bluing, etc. It is difficult to say just where and how the stain originated. We have seen yarn stained in this manner before it was woven or bleached. The only plausible explanation in that case is that the stain was due to the stencil ink used in marking the cotton bales. This ink must have come through the burlap and contaminated the cotton. This ink was dry and only affected a few fibers. In the processes where the cotton was wet, the stain dissolved to a limited degree and spread. The stain was confined to the warp and filling separately, but did not spread on both.

In the fabric which you submitted the stain is scattered. In the 8 in. strip, there are seven stains. One is definitely in the filling and two are in the warp. The remaining four are in both warp and filling and do not follow either.

This leads us to believe the stains are caused by undissolved particles of bluing used in the bleaching and finishing. This might not have been dissolved or it might have been precipitated by combining with some of the fat particles in the softener.

A strong chlorine bleach will lighten the stain, but will not completely remove it. If it cannot be stripped with hydrosulphite or titanium chloride, the best way to salvage the goods will be to dye them a dark enough shade to cover up the stains.

Twisted and Lopsided Stockings

Editor, Overseer's Corner:

This letter is to discuss several points raised in Mr. K. R. Barker's letter about "Crooked Stockings," which appeared in the September, 1938, issue of TEXTILE WORLD. The letter was interesting, and his method of correcting the trouble good. However, this writer prefers a method taught him more than forty years ago by a machine fixer who learned the trade in England. This method is to insert a knitter's pick-up through the first leg narrowing marks, and then bring the top of the welt together at the selvages, being careful not to stretch the fabric on either side.

Also referring to Mr. Barker's letter, many years ago we made some stockings out of yarn which was part Z twist and part S twist. When the stockings came off the machine, they were twisted both ways in each leg where we happened to change cones from one twist to the other. It is not my experience that twist ever made a leg lopsided enough to bother a seamer. However, when the twist has not been balanced in the yarn, we have had a little trouble in finishing.

A leg having the welt short on one side and the body short on the other

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side might be the result of the needles in the head being a little out of line, since the width of the leg varies as the knitting progresses. Variations in the needle line are always multiplied by the number of courses knit. For the usual lopsided stocking, the alignment of the needles and the settings of verge-plate and jack-bed can be easily checked with a gage. A half-inch difference in the length of the sides of a leg from the first leg narrowing to the welt would be approximately doubled in the length below the welt. Since the sinkers draw yarn for two stitches, they must draw twice as much yarn as is required for the stitch variation. In other words, the sinkers are moved 0.002 for an 0.001 variation of stitch in each course, or 1 in. in 1,000 courses.

When a verge-plate has been accidentally moved, it is well to check the plates on the adjacent heads as well, so as to keep all the plates in line. After the verge-plate has been returned to its position, the jack-bed may be moved, should the clearance be found incorrect. This movement of the jack-bed can be most accurately accomplished with the gage foot in contact with the tip of the sinkers when drawn, as for knitting.

When the leg is square to the first leg narrowing, and the needle line straight, the rest of the leg will be as square as it is possible to make it.

—Walter A. Simond
(*New Hampshire*)

Pin-Roll Stop-Motion

Readers familiar with the weaving of plushes and velvets may have noticed an inaccuracy of the diagram of the pin-roll stop-motion described on page 70 of the January issue of Textile World. The wire shown at the lower right-hand corner of the diagram is unnecessary; it is the angle, through its connection with the loom, which actuates the stop-motion as soon as it touches the contactor arm.

Cleaning and Doffing

In card room can be scheduled to increase operating efficiency and production quality

By WALTER DANHOFF,
Chiquola Mfg. Co.

DOFFING and cleaning are of great importance to the card room, and the more closely they are studied in detail, the more efficiently can quality production be obtained. Today a lap is made on single-process pickers in from 5 to 9 min. actual running time, depending upon the speed of the picker and the weight of the lap being made. Therefore, it can be readily seen that the time required for doffing a picker lap is important. Upon the few seconds required for doffing may depend the card's continuous running or its periodic waiting for laps. If the picker tender is required to start the picker as soon as the pin is pulled and before the lap is set on the scales, rather than after, several seconds can be saved on each doff. These few seconds often are the difference between under-production and over-production in a picker room.

When a card is doffed, the can should be filled only as full as can be handled conveniently. Often, a full can will weigh less than it should, due to a worn trumpet in the coiler head. By checking and replacing or repairing worn trumpets, one may find it possible to place much more cotton in the can per doff. Thus, the time between doffs can be increased, a subsequent saving of labor effected, and piecings on drawing reduced.

Most drawing frames have a full-can stop motion or a yardage stop motion to determine the doffing time. Stop motions should be checked to see that they really are set for a full can. Here again, the trumpets should be checked to see that they are the correct size for the sliver being run. As is true with the cards, several pounds can be added to a doff by using a trumpet of the correct size instead of one that is too large for the grain sliver being made.

In order to doff a fly frame as quickly as possible and still get the necessary cleaning done, the doffing should be carried out according to a systematic schedule. A schedule which can be used in most mills, with a few variations, is as follows:

1. Slack ends on frame.
2. Lay up both lines of flyers.
3. Pick tops of spindles.
4. Stack roving in box.
5. Wipe out roller beam guides and top casing.
6. Put empty bobbins on frame.
7. Put flyers on and wind down ends.
8. Pick flyer and start up frame.

Cleaning

In the opening room, burlap bagging in which bales of cotton are wrapped and ink stains on the cotton from bale markings are two factors which contribute greatly to ends down in the spinning room and seconds in the weave room. Every opening-room employee should be given strict instructions to watch for these two evils. When ties and bagging are removed from the bales, all pieces of burlap, no matter how small, should be picked off and put with the waste. At the same time, the bales of cotton should be inspected for ink stains, and any cotton on which they occur should be removed and put with the waste. Motes and waste from opening-room machinery should be removed at regular intervals, in order to obtain the maximum amount of cleaning.

Motes and fly waste in the picker room should be removed at regular intervals, the same as in the opening room. The time between removals should be governed by the grade of cotton being processed. Trashy, low-grade cottons require much more frequent removal of motes than do high-grade clean cottons. Pickers should be cleaned off with an air hose at least once daily and perhaps oftener, depending upon the grade of cotton being run, and with a brush or mop at least once weekly.

All card cleaning should be done with a brush or mop. Fanning-off or flapping of cards should not be permitted when stock is going through the cards. It is permissible to clean the back and sides with a brush, but the fronts should be wiped off by hand with a piece of waste or toppings. When a brush or a flap is used on the front of a card, a certain amount of fly waste and loose lint will get into the web, and, once it is folded in, it will be carried on through the various processes. The number of times per day that the toppings and fly waste are removed from the card is determined by the amount that it is set to produce.

The drawing frame is one of the places most likely for clearer waste to get into the stock. This causes slugs and gouts in roving and yarn

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and, if found in sufficient quantities, will cause excessive loom stoppage. Top clearers on the drawing frame should be picked at least every 2 hr. and bottom clearers at least every 4 hr. The time element depends upon the type of top roll used. With some types of roll covering, more frequent picking of the clearers is required. The front of the frame should be cleaned often enough to keep loose lint from collecting and getting into the stock. The lower part of the frame and gearing should be wiped clean at least once a week.

Although the practice of fanning off fly frames at doffing time has been discontinued in most cotton mills, it still exists in some. To obtain maximum cleanliness and first-class work, frames should always be wiped by hand. Roller-beam guides should be wiped at each doff and the creels at least two times per week. In the interest of trouble-free operation, all gearing should be cleaned twice weekly, spindles picked daily above bottom casing, and backs brushed out daily. Top and bottom clearers should be picked at each doff, and more often if necessary, to keep the clearer waste from getting into the roving.

Another part of the card room which needs cleaning at least once a week is the ceiling and overhead pulleys. One of the best and quickest ways to clean overhead is by the use of air hose. This should be done preferably during the week end when the room is being cleaned at stopping time. By covering frames directly under the pulleys with a piece of cloth, only a small amount of line or pulley accumulation will get on the stock.

The fabric must be right if the finisher is to obtain good results in napping

For Satisfactory Napping

Fiber characteristics are as important as is finishing procedure

By R. A. C. SCOTT

SATISFACTORY production of napped fabrics involves strict adherence to six fundamental principles. The construction of the fabric should be of sufficient firmness so that after fulling a uniform, fibrous cover conceals weave foundations. Many times napping of cloths which are much too open in texture is tried, and, after fulling, these fabrics lack sufficient cover to conceal the textural characteristics of the weave. Sometimes it is possible to improve fabrics which are too open for satisfactory napping by increasing the number of picks; however, at other times it becomes necessary to change the entire construction of the cloth.

Selection of the most suitable weave is important and is determined by the construction, type of cloth, and degree of surface pile desired. The Russian twill is one of the best weaves for nap-finished fabrics, but is not suitable for loose constructions. In some cases it is possible to substitute a plain weave for the Russian twill in open fabrics, this having the effect of firming the cloth somewhat and bringing the yarns closer together.

Where complete concealment of weave is desired, the same direction of twist in both warp and filling yarns is of considerable advantage, due to the tendency of the yarns to bed into each other and form a compact cloth. In other words, for best results, either S-twist or Z-twist yarn should be used in both warp and filling, but S-twist yarn should not be used in one direction in a fabric if Z-twist yarn is to be used in the other.

Yarns used in fabrics to be napped should be spun evenly and free from irregularities, inasmuch as such irregularities in the yarn are likely to be accentuated after napping, causing surface unevenness, and impairing the smoothness of the finish.

Sufficient fulling must be allowed for, in order that yarns may become matted and provide the desired amount of cover. Unless an evenly-distributed cover is produced during the fulling operation, the desired smooth, dense cover in the finished fabric will not result, as the subsequent raising operation is likely to accentuate fulling defects.

It is essential that the wool or shoddy used possess a fair amount of felting property, as without this it is impossible to secure the requisite density of cover. Shoddy, especially of a coarse nature, blended with large percentages of rayon, is not conducive to good nap finishes. Short-staple wool fibers such as noils, and rayon not exceeding 25%, are more adaptable for this purpose. Felting is essential, so that whether shoddy or noils be used in conjunction with rayon, they must possess good fulling properties.

Fabrics which possess all of the above-mentioned characteristics will undoubtedly permit production of better napped finishes than would be possible with fabrics in which some of the characteristics were deficient. Of course, meeting all these requirements will somewhat affect the cost of manufacture, but in nearly every case the difference in the finished product should more than offset the extra cost involved.

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Knit Pattern Fields

How they are generated and how they are used to reproduce a design

By J. FREDERICK CAHILL

THIS discussion of the generation of knit pattern fields and their use in reproducing a design follows a discussion of their origin and their significance, which appeared in the January issue. Suppose a knitter wants to duplicate a certain design or that he conceives an original design, and that reproduction is to be done on a machine equipped with medium-gage needles—say from 14 to 20 gage. The cylinder is large enough to accommodate 4 design feeds (literally 8 feeds) and the width of the design to be reproduced requires 20 needles. Then, suppose the machine has a 29-in. cylinder with 18-gage needles and the charted number of needles is 1,069. But, as the needles are molded in pairs, there are either 1,068 or 1,070 needles to figure with.

The knitter has 4 pressers, with removable jacks, for an 18-gage machine, but the pressers are built for 100 jacks. However, for one reason or another, he does not want to ask for new pressers. But, for an 18-gage machine, pressers with 100 prints are slightly less than 6-times the gage, and, therefore, are of a convenient circumference for use on a fairly well crowded machine. Hence, it remains to be seen what can be done with these pressers.

Now, 1,070 needles divided by 100 leaves a remainder of 70, which can be used as either 70 plus or 30 minus. Design field is shown in illustration. In either case, since there are 20 needles to a full pattern division, there is a difference of half a pattern. To remove enough needles to bring the total down to 40 needles or 2 pattern divisions minus, probably would cause the needles to be too widely separated for satisfactory operation of the machine, while to add 10 needles might cause the needles to bulge out of a true circle. Yet, it might be possible to squeeze in three more leads without causing too much distortion. In that event, there would be a lap of 76 plus or 24 minus; hence, it is necessary to consider the form that the design field will assume, and its effect upon the distribution of the design figure in the fabric.

A 4-feed circular knitting machine knits a 4-course band spirally disposed around the tube of fabric. On a loop-wheel, spring-needle machine the fabric is drawn upward as the knitting proceeds, so that at each feed, the course that was laid in by that feed in the preceding revolution, is always 4 courses above the course just being laid in. When 4 pressers of equal circumference, divided into an equal number of divisions of an equal number of prints, are applied to the 4 courses that constitute the band, they automatically divide it into a series of blocks which can be made to take various forms. However, the tops and bottoms of the blocks are invariably parallel.

With 5-division pressers, or pressers of any number of divisions, the positions assumed by the blocks constitute the design field. There is one block for each set of presser divisions. The term lap refers, not only to the first division of the presser under observation, but to the entire block of 4 first divisions as printed in the 4-course band, as well as the relative positions of all blocks in regard to those above and below.

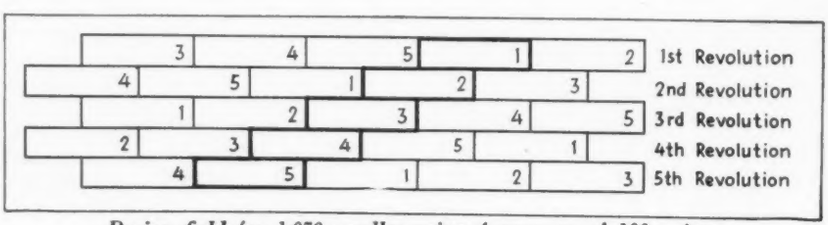
Assume the 4-course band to be of a length equal to a number of full circumferences of the pressers in use, in this case nearly 1,100 wales. Also, assume the band to be wrapped around the cylinder, on the needles just below the beards, in a manner that would permit of its being moved backward and forward. A band of 4 rows of squares, on cross-ruled paper, wrapped around any large cylinder would serve the purpose. If the band were divided into presser division blocks, it would serve better as an illustration and could be reduced to 200 squares in length.

Then, if the cylinder were assumed to contain 176 needles, the effect of the lap of pressers with 100 prints would be just the same as the lap of these pressers on a cylinder containing 1,076 needles. Suppose the presser division blocks were numbered in the order of 1-2-3-4-5 from left to right (the order in which presser change of position would occur in the case of a minus lap) and the band were wrapped around any cylindrical object so that a block No. 1 would lap 24 squares. Then, block No. 1 would extend 4 squares to the left of a block No. 5 if placed immediately below it. If the band of paper were reversed end for end and the same wrap made, the result would show the effect of a plus lap of 24 needles.

A strip of a 100 squares in length and 4 rows of squares in depth would show the same effect. However, there would not be enough presser division blocks to build an entire design field unless the blocks were separated. The effect shown by such an experiment would be the same as if the pressers of 100 spaces had jacks in 19 spaces out of every 20, the remaining space being left vacant, and the pressers were mounted on a machine with 1,076 needles.

If these pressers were set in such a manner that all would tuck on the same needles, the 4-course band would consist of presser division blocks of 20 wales in width and 4 courses in height, with each block extending 4 wales to the left of the block immediately above. Five revolutions of the cylinder would produce 5-times the 4-course band to complete the 20 courses that constitute the height of a design field for 5-division pressers. Any five of the presser division blocks generated in this manner, taken downward in the direction of lap, which, for a minus lap is always opposite to the direction of rotation of the cylinder, constitute the design field according to the requirements of the given conditions.

(The discussion of knit pattern fields will be completed in an early issue, with a further discussion of their generation and their use in reproducing a design.—*Editor.*)



Design field for 1,070 needles using 4 pressers of 100 prints has a lap of plus 70 or minus 30

LOOMFIXERS' MANUAL

COTTON SECTION—*Chapter* V—*(Continued)*

By IVAR MOBERG

Harness Motions

WE now begin a discussion of dobbies. The most common of these is the single index, double lift, single cylinder dobby. While this motion has not the capacity of double index or double cylinder, it is much more dependable and requires less accurate setting. Fig. C48 shows a dobby of this type, driven from the bottom shaft on a shuttle changing loom. Fig. C49 is a diagrammatic view of the parts of a dobby and of a dobby drive.

To set and adjust an old dobby that is to be conditioned, first remove all parts in the dobby frame and wash them thoroughly in kerosene. It is of utmost importance that dobbies be kept clean at all times. Operation of this type of motion depends largely on gravity and if lint, sticky oil, or grease is permitted to collect between the moving parts they may stick occasionally, causing mispicks in the cloth. After cleaning, replace dobby jacks, from back to front, examining each jack for wear of the jack back boss and stirrup notches. Discard any worn jacks. A light oil of good quality should be used to lubricate each jack, as well as other parts which will be referred to from time to time. Place any new jacks at the front of the dobby where they will be subjected to the most usage. Do not, yet, tighten up on the end jacks.

Re-insert the dobby fingers, examining each finger for worn peg runs. Discard all fingers that show a groove worn by the chain pegs. Lubricate each finger.

Check all the jack backs and hook assemblies for wear and correct form, discarding any assembly that shows wear and/or incorrect form. It is far better to use all old assemblies in good condition, rather than to mix them with new ones; or to use all new assemblies, keeping good old ones for later replacements. Lubricate each assembly.

Adjust the end jack at front and back by tightening the adjusting screws so that the jacks will be held in perfect vertical position and the hooks in alignment with their spaces in the racks. Do not tighten the end jacks excessively; each jack should drop of its own weight after being lifted by hand into top-shed position.

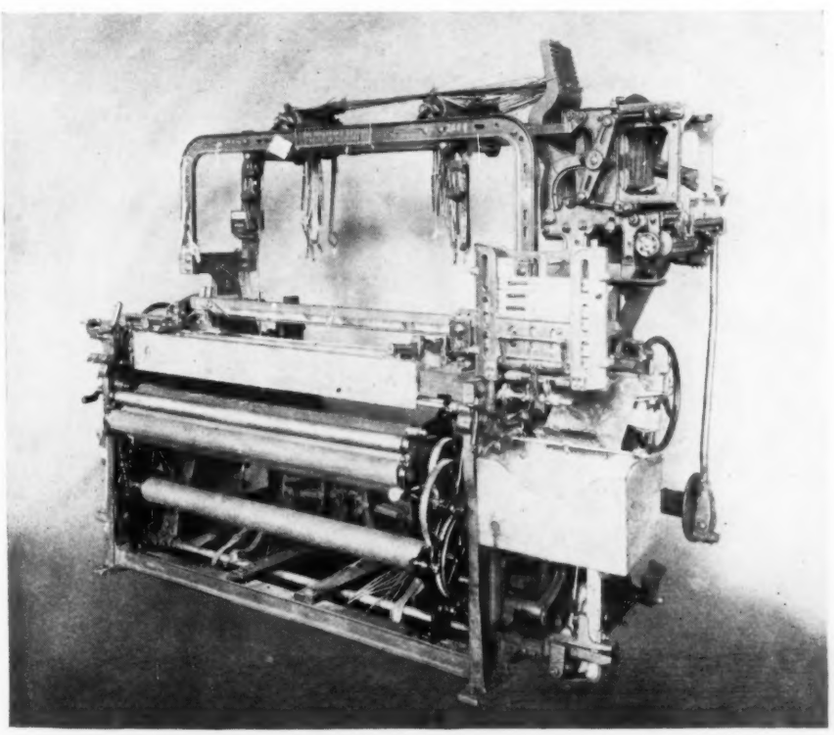
Examine the dobby needles for wear and uniform length. Any worn or short needle should be discarded. With the wire stop off, lift each top hook in succession and insert the needles into their spaces at the side of the racks, taking care that they rest on the straight extension of the dobby fingers and that they do not bind. When all have been inserted, replace the wire stop.

Place a pegless chain bar on the cylinder, and adjust the height of the latter so that the dobby fingers will just clear the top of the chain bar when it is directly underneath the peg run on the dobby fingers. This adjustment is made by raising or lowering the front and back bearings of the chain cylinder.

Using a dobby-hook wrench, bend the hooks up or down, if necessary, until the points of the hooks clear the dobby knives by $\frac{1}{8}$ in. when the latter are directly underneath the hook points. When this adjustment is completed, all hooks should be in the same plane. Place a fully pegged chain bar on the chain cylinder, making sure it is perfectly seated. Then adjust the cylinder laterally so that the pegs will contact the dobby fingers exactly in the center as the pegs are moved on to the fingers when the cylinder is turned by hand. There should be no end play of the cylinder when this adjustment has been made.

Turn the loom over by hand until the dobby crank is horizontal. Then, adjust the length of the dobby-drive connector so that the rocker arm is vertical. Turn the dobby crank over one-half revolution to the opposite horizontal position; then, recheck the position of the rocker arm. It is possible a slight readjustment of the length of the dobby-drive connector may have to be made if the rocker arm is not exactly vertical. The point to check is that the rocker arms balance; i.e., they must move an equal distance from an imaginary vertical line drawn through the center of the dobby shaft.

Turn the loom over until the dobby crank is vertical, adjust the length of the knife connectors, and position the upper dobby knife from $\frac{1}{4}$ to $\frac{3}{8}$ in. inside the notches in the dobby hooks. Turn the loom over one-half



C48. Single-index, double-lift, single-cylinder dobby driven from bottom shaft of shuttle-changing loom

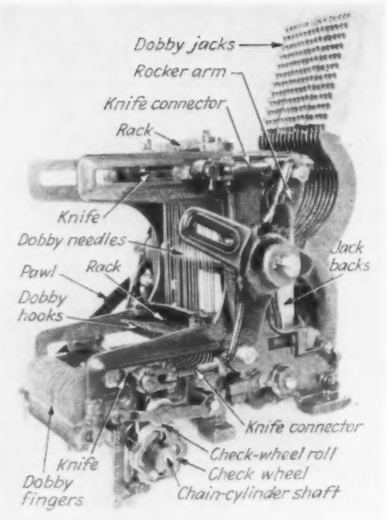
pick, until the dobby crank is in opposite vertical position, and adjust knife connectors for the lower dobby knife until it is ¼ to ⅜ in. inside the notches in the dobby hooks.

With a shuttle picked into the right-hand box and the lay against the protection, turn the dobby crank until the dobby jacks are in the center of their movement and the bottom knife is in its inward movement. At this point, tighten the setscrews. Since there is no rest for the harnesses in a dobby movement, only slight deviation for this timing is practical.

Properly mesh the worm with worm gear and apply the driving chain. This chain should be moderately slack, but not too loose. Its slackness is regulated by moving the idler roll in or out as required.

On a single-index dobby, in which the chain runs continuously, great care must be taken in timing the chain cylinder. Turn the loom until either knife is just about to catch the hooks, and turn the chain sprocket forward until the pegs in the chain bar on the chain cylinder are directly underneath the peg run, so that the fingers are lifted to their highest position by the pegs. The last turning of the sprocket must always be forward, so that the slackness in the driving chain is taken up. When the proper setting has been obtained, tighten the setscrews in the sprocket.

If the dobby is of the double-index type, in which the dobby chain runs



C50. Chain-cylinder pawl drive on double-index dobby

intermittently, the timing of the chain cylinder is somewhat different. The chain bars have two rows of peg holes, and two picks are taken from each bar. The bottom knife takes the first row of the bar, and the top knife takes the second. Therefore the chain cylinder must turn while the bottom knife moves in toward the hooks.

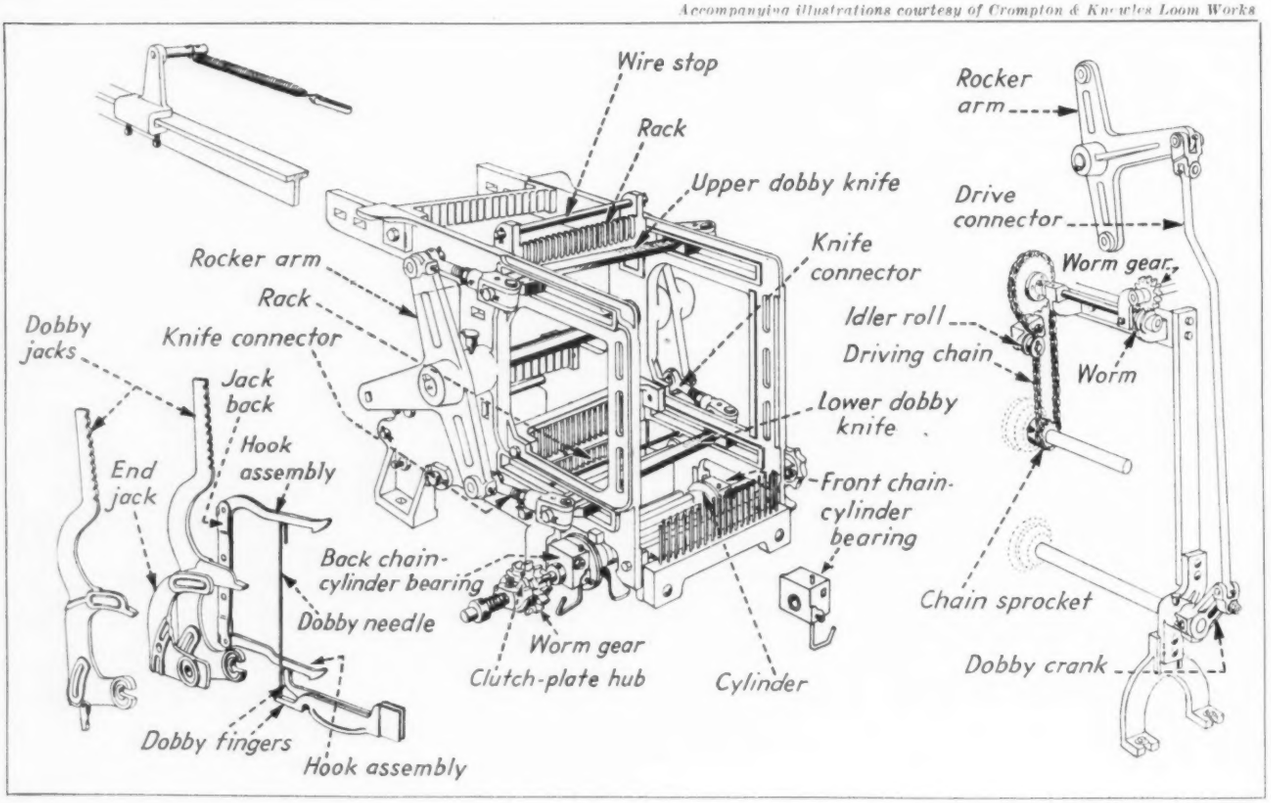
Turn the loom over in running direction until the bottom knife, in its outward movement, is just about to catch on to the hooks. Turn the chain sprocket until the intermittent worm has just completed the movement of the chain cylinder. Tighten the setscrews of the sprocket in this position.

Now, without changing the position of the loom, loosen the setscrews in the clutch-plate hub and turn the chain cylinder until the pegs in the chain are directly under the peg run on the dobby fingers, at which point the fingers will be in their highest position. Then re-tighten the setscrews in the hub.

Some double-index dobbies have a pawl drive for the chain cylinder, as illustrated in Fig. C50. In such cases the negative stroke of the pawl must overrun the teeth of the ratchet so that on the positive stroke there will be a sufficient amount of lost motion to be taken up before the pawl comes into contact with the ratchet teeth. The amount of this lost motion must be adequate to prevent the chain cylinder from starting to move before the top knife has picked up the hooks indicated by the second row of pegs on a chain bar. Turn the loom over slowly by hand to check this point.

Loosen setscrews in the ratchet and check-wheel on the cylinder shaft and turn the chain cylinder until pegs are holding the dobby fingers in their highest position; at this point tighten the setscrews in the ratchet. Turn the check-wheel until the check-wheel roll drops into one of the hollows; then tighten check-wheel setscrews.

Accompanying illustrations courtesy of Crompton & Knowles Loom Works



C49. Diagrammatic view of parts of a dobby and of a dobby drive

LOOMFIXERS' MANUAL

RAYON AND SILK SECTION—*Chapter III*

By H. E. WENRICH

Filling Trouble

IT IS probable that the average loomfixer spends more of his time tracing down and remedying defects due to filling trouble of one variety or another than he does on all of the other kinds of loom trouble with which he may come in contact, combined. Furthermore, tracking down filling trouble requires not only mechanical ability and familiarity with the subject, but also a great amount of patience and persistence. This is especially true when the trouble is in the form of broken picks.

Broken picks can be caused by various parts of the loom itself, by the quills, or by the shuttles.

Close supervision will often show certain looms continually causing broken picks. The loomfixer should spend all his spare time on these looms, watching them while in operation. In this manner he will be able to observe the trouble as it happens. On multi-shuttle weaves, quite often a change of a shuttle from one box to another will eliminate the difficulty. Replacing the shuttle causing the defect with another is also sometimes effective.

Broken Yarn Indicative

When a loom troubled with breaking filling stops on the pick, the length of the broken yarn will often explain the nature of the break. On some weaves, the loom may fail to stop on the broken pick, for one or more of several reasons, even though the stop motion is timed and adjusted correctly. When this happens, thoughtful study should be given before making any change or adjustments. Such trouble is encountered more on rayon yarns of soft texture than on those having a hard twist or on silk yarns. It is also more likely on light yarns than on heavy ones.

An example will illustrate why looms sometimes fail to stop when filling yarn breaks. Suppose the yarn snubs fast on a quill knot as the shuttle is about to enter the receiving box. The yarn is under the filling fork; the dagger is past the knock-off cam; and the yarn snaps. The broken filling flies back through the closing shed, leaving a slug under the dropping filling feelers or along one side. The broken yarn end still attached to the shuttle catches fast in the selvage as the shed closes, and is held fast. Therefore, the loom continues weaving. Sometimes, of course, the yarn fails to catch in the closing shed, and the loom stops.

Broken picks due to shuttle boxes are of a length which can easily be seen and overcome by a fixer adept at his task. It is the hidden defects which test his ability. For each type of yarn there is a different method of overcoming trouble at the loom. On yarns of but a few turns per inch the filaments are often split open. This causes a rough appearance in the cloth, and eventually some of the yarns may break, leaving broken picks in the fabric. The quills must be smooth to prevent drag; such smoothness will at the same time eliminate split filaments. Where quills are warped out of line and lie too high, too low, or to one side of a shuttle, the clip or spindle must be adjusted to bring the quill into correct position.

Types of Quills

Each type of quill has certain advantages which cannot be duplicated by the others. For instance, paper cops weigh less and are therefore less expensive when shipping. They cost less, and, when damaged, the replacement cost is not so great. Size for size, paper cops hold as much or more filling than other types of quills. However, they have disadvantages which offset these advantages. When filling breaks, weavers frequently throw the defective cop into the waste can, yarn and all. Often these breaks are intentional, if the yarn is extremely poor or bruised. Another reason why paper cops are not always satisfactory is that, on the last few picks remaining on the cop, the filling comes off too freely and without sufficient tension, causing snarly picks. (On looms equipped with side feeler motion in the shuttle, this snarly effect will not be encountered, as the loom will stop before the last few picks are woven off the cop.)

Step quills are very good, due to the fact that the yarn has an even tension, down to the last pick. The relatively small capacity of this type of quill led to the introduction of flat quills, which cut down loom stoppage for refilling purposes. Advantages of flat quills have previously been fully discussed. (See T.W., Nov., 1936, p. 78/79; July 1937, p. 78/79. For instructions on "Changing to Flat Quills" see T.W., Nov., 1937, p. 116; Dec., 1937, p. 82; and Feb., 1938, p. 87).

All quills should be placed upon a loom board in such a manner that no two quills will touch. Loom vibration, regardless of how small it may be, will cause quills to rub together, weakening the filaments to such an extent that the yarn will pull apart at the least tension. When pins in a quill board are set too close, to make certain there will be no rubbing place quills only on alternate pins of the board.

Breaks Caused by Reed

Another source of trouble is the reed. Many weaves pull the edge of the cloth in toward the center, giving sharp edges to the reed dents along each side. As the reed beats in the pick, the filling yarn is cut, and, when the shuttle is driven across the lay on the next pick, slack in the yarn is taken up, resulting in a slight jerk which pulls the severed end loose from the selvage. It then catches around the filling fork, and produces a broken pick. The remedy for this type of broken pick lies in rubbing down the side dents of the reed to remove their knife-like edges.

The filling feeler wires of the center stop motion are frequently overlooked when studying causes of broken picks. A careful check of the wires often discloses them to be cut on the bottom; as the wires fall downward on the filling, the sharp edges cut the yarn like knives. Removing all the wires and replacing them with new ones is the best way to overcome trouble of this type. When new wires are not available, the old ones can be utilized by first polishing them to prevent sharp edges, and then turning them end for end.

Feeler wires should not be too long. The shorter the wires, the better chance the loom has to stop when the filling breaks or a bobbin runs empty. Still, the wires must be long enough to keep the loom from stopping when the filling has not broken or become snubbed on some knot. The fixer must decide just what length is best for the particular looms in his section.

STAPLE COTTON FABRICS

By JOHN HOYE

Fabric Technician with W. Harris Thurston, New York

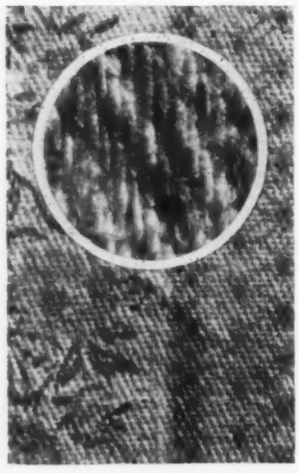
This thirty-eighth installment of Mr. Hoye's series of articles on staple cotton fabrics—which began in the January, 1936 issue—completes the discussion of ticking.

CONVERTED TICKING

CONVERTED ticking is produced in many more designs and colorings than woven ticking, which usually is made in only striped patterns. Standard gray cloth constructions of warp sateens, drills, and sheetings are converted by bleaching and printing with suitable mattress patterns of harmonizing bedroom colorings.

Sateen Ticking—Converted sateen ticking is similar to woven yarn-dyed sateen ticking, and may be either printed or piece-dyed in fast-to-light colors. It is closely woven—some qualities have a closer texture than the lower qualities of jacquard damask ticking. Printed sateen ticking often is printed with fancy striped effects to simulate woven stripes, while piece-dyed sateen ticking sometimes is made with alternating sections of Z-twist and S-twist yarns to produce shadow-stripe effects. Printed ticking woven 34 in. and finished 32 in. wide is used for mattresses, and that woven

Printed sateen mattress ticking, 34 in., 118x72, 2.00 yd., finished 32 in.



Printed drill pillow ticking, 30 in., 68x40, 3.00 yd., finished 28½ in.

30½ in. and finished 28½ in. wide is used for pillows. Weights vary from 5.33 to 8.00 oz. per yard. Piece-dyed sateen ticking is made to finish at 8.00 oz. per yard and 32 in. wide.

Converted sateen ticking is used for mattresses, pillows, coverings for inner-spring mattresses, etc. Cheaper and lighter-weight qualities often are given a light back-filled finish.

Yarns are the same as those used in standard warp sateens; i. e., 14s to 28s warp and 22s to 42s filling.

Examples of gray sateen ticking for converting:

34 in. 108x56 3.00 yd.

34 in. 118x72 2.00 yd. down- and feather-proof

30½ in. 118x64 2.25 yd. feather-proof.

Drill Ticking—Converted drill ticking is a standard 3-harness warp-face drill. Compared with warp sateen, it is made of coarser yarns and has fewer ends and picks per inch. Usually it is not so good in quality as sateen, but better in quality than printed sheeting ticking.

Heavier weights of drill ticking often are given a pure starch finish only, whereas lighter weights usually are given a back-filled finish. Converted drill ticking is used for mattresses, pillows, and inner-spring mattresses.

Yarns are the same as those used in standard drills; i.e., 12s to 20s warp and 10s to 22s filling.

Examples of gray drill ticking for converting:

34 in. 60x36 4.75 yd. finished 32 in.—used for mattresses.

30 in. 70x46 3.00 yd. finished 28½ in.—used for pillows.

Sheeting Ticking—Converted sheeting is the cheapest converted ticking made. Only light-weight sheeting is used, and usually is bleached, printed, and given a back-filled finish. Designs used in printing usually cover the face of the fabric well, and thus hide the light construction of the cloth. Back-filling, for which china clay and starch usually are employed, hides the interstices between the warp and filling, and thereby gives the cloth a solid appearance, more weight, and a semblance of improved quality. After the fabric is made into a mattress, this back-filling material is likely to loosen and drop out.

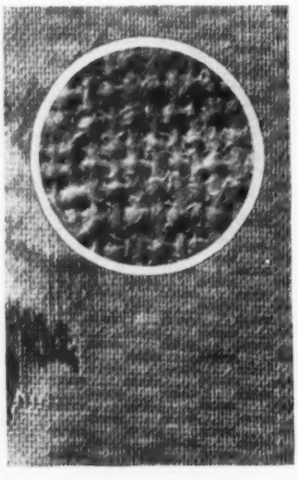
Cheap printed sheeting is used solely for mattresses filled with soft stuffing or filling material, such as loose cotton, linters, kapoc, and moss, none of which has much resilience or any penetrating power.

Yarns are the same as those used in standard light-weight sheeting; i.e., 22s to 29s.

Examples of gray standard light-weight sheeting for converting:

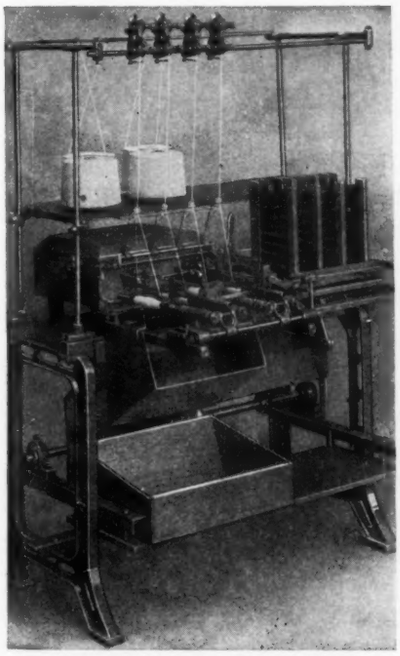
36 in. 44x40 6.15 yd. finished 33-34 in.

36 in. 48x40 5.50 yd. finished 33-34 in.



Printed sheeting back-filled mattress ticking, 36 in., 48x40, 5.50 yd., finished 33-34 in.

NEW MACHINERY AND PROCESSES



Filling Winder (Atkinson, Haserick)

Filling Winder

Among machines shown at the textile machinery exhibition held in Manchester, England, was an improved Hacoba automatic filling winder manufactured by Muschamp Taylor, Ltd. This type of winder is sold in this country by Atkinson, Haserick & Co., 152 Congress St., Boston, and was first introduced here somewhat over a year ago. Entirely automatic operation of the machine is as follows: Without attention from the operator, the machine winds a bobbin full, stops the bobbin, lowers it into a tray, inserts a new empty bobbin, cuts the loose thread from the full bobbin, and restarts winding. This change-over is accomplished in 4 to 6 sec. Thus, the duties of the operator are confined to creeling new packages of yarn as the old ones run out, keeping the magazine charged with empty tubes, and piecing-up broken ends.

It is stated that as the machine is spindleless, bobbins can be wound at speeds as high as 6,000 r.p.m. Bobbin building is mechanical, thus eliminating the use of disks or cups, so that delicate yarn, such as silk and rayon, can be wound with a minimum damage to their filaments. A stationary of traversing bunch of any desired length can be built automatically. The machine is built in units of four spindles.

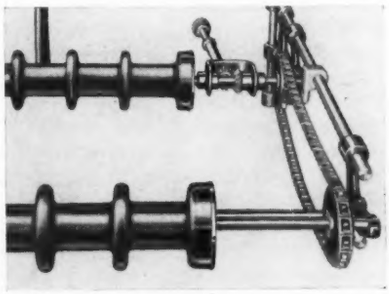
The winder is designed to handle cotton, wool, rayon, and other yarns of any construction or twist, and in all counts from the finest to the coarsest. Change-over from one type of yarn and/or bobbin to another can be made simply and in a short time. Change from right wind to left wind or vice versa is effected merely by reversing the direction of rotation of the lineshaft.

Also shown at the Manchester Exhibition was a Hacoba automatic winder for winding quills for narrow looms and for winding braider bobbins.

Roving Frame Creel

The Uniflex roving-frame creel recently developed by Saco-Lowell Shops, 60 Batterymarch St., Boston, is fabricated from a steel section and is covered with a heavy, durable coat of baked enamel. This gives it a highly effective surface and, at the same time, makes it lint-shedding and self-cleaning. Deep convolutions of the roll eliminate the necessity of using separating pins. The creel is supported by a double truss rod with fastenings which permit a vertical adjustment of 5 in. and a horizontal adjustment of 18 in. Use of floor supports, which would interfere with the placing of cans under the creel is eliminated.

The new creel is standard equipment on all new Saco-Lowell con-

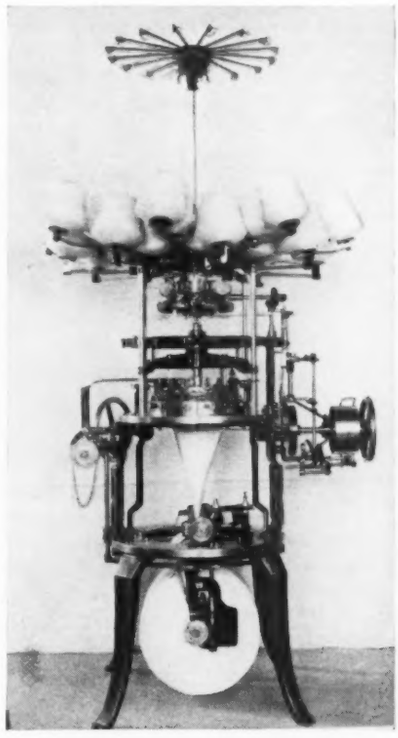


Roving Frame Creel (Saco-Lowell)

trolled-draft equipment, and also, can be applied to installations of frames now in mills. Frames can be supplied with either a single creel or double creel.

Multiple-Feed Knitting Machine

Double production, as compared with an 8-feed machine, is possible with a new 16-feed ribbed-underwear knitting machine, brought out by Wildman Mfg. Co., Norristown, Pa., while, it is said, only 36% more power, 30% more capital investment, and no more floor space are required.



Multiple-Feed Rib Machine (Wildman)

Pinching of the cloth and backlash are prevented by a gear-driven dial. The fabric roll can be doffed without removing any rod or tube, since one standard is arranged to swing to the side. A belt-driven take-up drives direct to the pulley on the worm. Ball and roller bearings are used throughout.

The machine is equipped with furnishings wheels which feed yarn to the needles under even tension. It is not necessary to stop the machine when putting on new cones, since the bobbin stand holds 32 cones. The yarn carrier is arranged to swing out to facilitate threading.

Signaling Device

The Pager, a device for automatically and immediately locating from one to twenty individuals, has been announced by Autocall Co., Shelby, Ohio. This signaling device appears to be particularly suited to textile mills which are not of sufficient size to warrant installation of more elaborate systems.

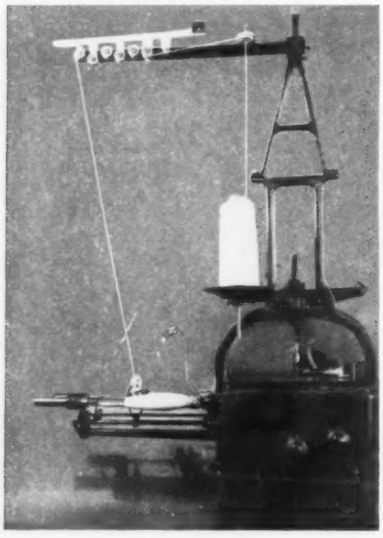
A code-sending mechanism placed in the office is wired to audible signals strategically located throughout the mill. The signals may be musical chimes, mellow-toned bells, or sharp

and insistent gongs. Codes are assigned to individuals called most frequently. The pointer is moved to the name of the person wanted by turning the selector knob, and then a slight push of the knob automatically sounds the code of that person twice. Codes can be sounded continuously by giving the opposite knob a partial turn.

The signaling device operates on 24 volts, 60 cycles; 18 volts, 25 cycles; or 12 volts, direct current. Since the signal circuit is independent, new or existing signals of any voltage can be used. It can be used with existing audible or visual signals of any type, and on installations of any kind.

Combination Compensation and Disk Quiller Tension

To insure uniform tension throughout the package a combination compensation and disk quiller tension has been announced recently by Silk City Metals Coating Co., Inc., 62 Ryle

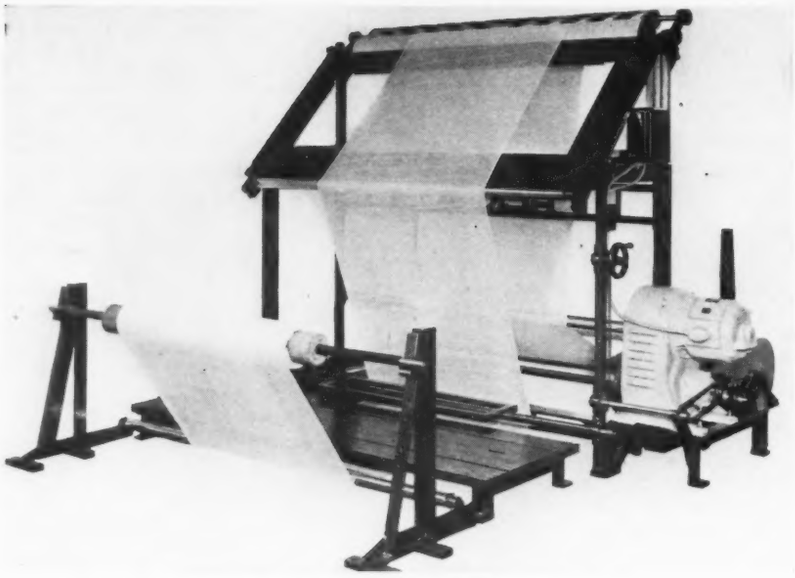


Combination Compensation and Disk-Quiller-Tension (Silk City Metals)

Ave., Paterson, N. J. The device is designed for use with the most delicate yarns, as well as heavier yarns. It is stated that shiners are eliminated, even when winding soft packages.

The tension consists of: (1) a long cast-iron tension bracket which is equipped with one porcelain ring, one steel disk, and three Bakelite pulleys; (2) an aluminum compensation lever attached to the tension bracket and equipped with three Bakelite pulleys and a sliding weight.

To operate the tension, the yarn is pulled through the procelain ring and underneath the disk; then after the aluminum compensation lever is lifted and the yarn is guided into the V-shaped grooved pulleys, the lever is dropped so that the yarn will pass over the three pulleys of the tension bracket and underneath the three pulleys of the aluminum compensation lever. Tension can be increased by moving the sliding weight forward.

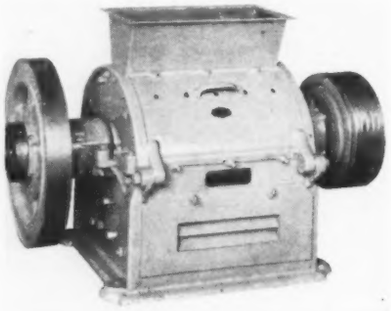


Measuring and Examining Machine (Hermas)

Flock Cutter

An improved air-cooled knife cutter for producing ground flock has been announced by Sprout, Waldron & Co., Muncy, Pa. It handles cotton, rayon, wool, silk, and asbestos.

Special knife arrangement and air flow through the machine reduce the tendency to heat. Sides are hinged and when opened expose the entire interior mechanism. The machine has an all steel and iron construction, solid rotor, and is equipped with Timken bearings. Extra heavy V-belt drive sheave and special heavy duty balance wheel produce smooth, vibrationless operation. There are no shelves or crevices where stock may accumulate and choke the machine.



Flock Cutter (Sprout, Waldron)

Measuring and Examining Machine

Announcement has been made by the Hermas Machine Co., Inc., Hawthorne, N. J., of a new measuring and examining machine. Surface wind take-up, plate-glass section in the inspecting table permitting skylighting of the cloth, and measuring unit with one Veeder-Root counter measuring in yards or meters and eighths or tenths are features of the machine. Clutch-control Vari-Speed motor drive operated by a pushbutton is used. Showcase lights in the glass table are optional.

Elastic rib top (Scott & Williams)

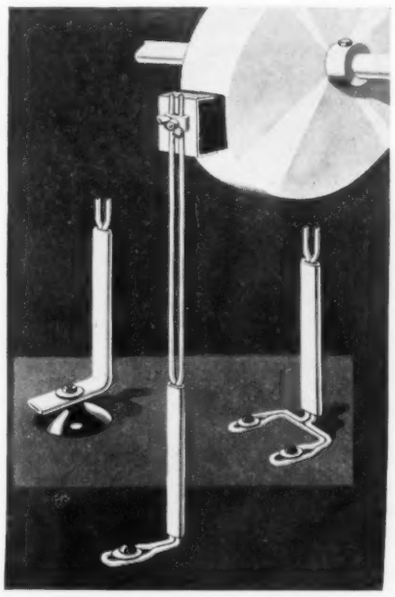
Rubber Laying-in Attachment

For production of slack-length, elastic-rib-top socks on full automatic half-hose machines, Scott & Williams, Inc., 40 Worth St., New York, has developed a laying-in attachment

which interlaces the rubber with the rib. This mechanism has been designed for application to the model HH-PW, HH-NRP, HH 13-step spiral float stitch, HH 25-step spiral float stitch, and regular HH machines, both with and without sinker-reverse plating. The welt and rib produced on machines equipped with the rib interlaced attachment is the regular HH rib top with the addition of rubber which is laid in every course. It is a simple matter to change HH machines from knitting rubber-top slack socks by means of this attachment, to knitting regular half hose without rubber.

Lubricator for Cams

Lubrication of cams is facilitated by an adjustable pad lubricator manufactured by National Industrial Products Corp., Pittsburgh, Pa. Each lubricator is provided with a special felt pad which affords sufficient oil supply to last several weeks. The device is said to give positive, clean, low-cost lubrication. Vacuum cup mounting provides a means of installation without the use of screws. A 50-lb. force or pull is required to dislodge the lubricator when it is properly installed. The lubricators are made of aluminum alloy and can be mounted on floors and walls or in inverted or angular positions if necessary.



Cam lubricator showing different ways of installing (National Industrial Products)

Weave-Room Truck

Designed to aid battery hands and filling haulers is a new weave-room truck, known as No. 32, recently brought out by Meese, Inc., Madison, Ind. The truck is of spring-steel frame construction, reinforced around the top with chrome leather, and covered with canvas. The bottom tray is 6 in. deep, and is used to hold bad filling and waste. The top basket is 14 in. deep, 12 in. wide, and 37 in. long, in the company's standard size, although the truck can be built to specifications of individual mills.

The truck is equipped with semi-steel wheel casters with thread guards, tip-truck style.

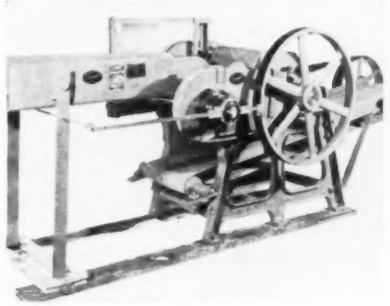
Weave-Room Truck (Meese)

Marker for Textiles

Development of a collapsible tube for marking ink has been announced by Ludwig Spiegl, Worth & Herbert Sts., Philadelphia. This tube has a nozzle designed to write either fine or coarse, on smooth and rough materials. The tube when empty can be thrown away, eliminating the necessity for returning empty markers for refilling.

Thread Waste Cutter

Specially designed for handling tangled waste is a new machine announced by Taylor-Stiles & Co., Riegelsville, N. J. Construction of the throat in relation to the feed roll and cutting cylinder, and location of the guards are said to prevent the waste from wrapping around feed roll, bearings, or knives.



Thread Waste Cutter (Taylor-Stiles)

Useful Accessories for Textile Mills

Packaging Material. A new transparent cellulose acetate packaging material in sheet form has recently been announced by the Plastics Div., Monsanto Chemical Co., St. Louis, Mo. The material, known as Vue-Pak, is said to be particularly suited to rigid and semi-rigid merchandise packages and containers. It will be available in colors, in addition to clear transparent.

Valves. Use of an aluminum-copper-silicon alloy, known as Duronze, in the stem thread bushings of its forged and cast-steel valves is an improvement recently announced by Hancock Valve Div., Manning, Maxwell & Moore, Inc., Bridgeport Conn. The makers state that these new bushings completely meet demands for valves that will operate satisfactorily without lubrication of the stem at elevated pressures and temperatures. The new bushings can be replaced, should it ever become necessary, thus saving the cost of a new valve stem and bonnet.

Circuit-Breaker Equipment. Square D Co., Detroit, Mich., has recently announced three new developments in circuit-breakers and panel boards. Type NMM can be had with any number of single-pole or double-pole breakers up to 40. Type LX, a narrow panel built to fit into the recesses of H-beams, is available in two sizes, for either 8 in. or 10 in. beams. A third recent development is the Type M rain-tight circuit breaker; these devices are built in sizes to hold one, two or three units.

Tachometer. Adaptability over a wide range is an outstanding feature of a hand tachometer brought out by George Scherr Co., Inc., 128 Lafayette St., New York. The tachometer is manufactured in two models, one measuring from 30 to 40,000 r.p.m. and the other from 25 to 30,000 r.p.m. An interesting feature of the instrument is that it contains eight jewels, which are said to add to the life of the bearings, reduce repair costs, and guarantee accuracy at the high speeds for which the instrument may be used.

Paint. Wet-X-Hale Paint Compound Co., 15 Moore St., New York, has announced a new type of paint which, it is said, can be applied directly to moist or wet surfaces, as well as to dry surfaces. Ingredients in the paint are said to absorb all moisture with which it comes in contact during application, and to deposit such moisture in an evenly distributed coating on top of the paint film, from which point it is said completely to evaporate. It is stated that this ac-

tion gives sure protection against peeling, blistering, etc.

Bearing Seal. S K F Industries, Inc., Front St. and Erie Ave., Philadelphia, has made available a patented triple seal which is said effectively to protect bearings against lubricant leakage, dust, dirt, and moisture. The rings which comprise the seal are so designed that they are free to locate themselves axially whenever shaft expansion occurs. Consequently, it is stated, close clearances are maintained at all times between the rings and the housing.

Steam Gun. For removing heavy accumulations of dirt, grease, and oil from machinery and equipment, Oakite Products, Inc., 14 Thames St., New York, has recently announced an improved steam gun. The outstanding feature of the gun is that it automatically lifts the cleaning solution from floor level to a height of 10 ft. or more without the aid of pumps, injectors, or other apparatus.

Counting Equipment. Durant Mfg. Co., Milwaukee, Wis., is offering a new series of stroke and revolution counters known as Series H. All shafts of the new counters run on oilless bearings; working parts, which are said to be manufactured of most durable material, are carefully fitted to insure smooth, accurate operation. The counters are available in twenty variations to fit many different requirements.

NEW CHEMICAL PRODUCTS

DuPont Sulphur Color

E. I. du Pont de Nemours & Co. announces the following new product:

Sulfogene Navy Blue GLR Conc., a sulphur color similar in fastness properties and general characteristics to those of Sulfogene Navy Blue GL Conc.; the newer type, however, is redder in shade and is also slightly brighter; it is not suitable for discharging or printing.

General Dyes

General Dyestuff Corp. announces the following new products:

Chrome Fast Yellow 5GD, a chrome mordant dye yielding bright, greenish yellow shades previously not obtainable with mordant dyes; prints on cotton and rayon possess excellent fastness to light in medium to full shades; Chrome Fast Yellow 5GD is suitable for compound printing with green or blue mordant dyes such as the Gallo Viridine or Gallophenine brands, to produce brilliant green shades.

Brilliant Euchrysine Orange R, a basic dye particularly recommended for producing colored discharges on pure or on weighted silk; this product yields even brighter shades than those obtained with combinations of Thioflavine TCN and Rhodamine 6G types; Brilliant Euchrysine Orange R is also suitable for application printing on silk or cotton and for dyeing silk.

Fastusol Red L4BL, a homogeneous direct dye yielding shades of very good to excellent fastness to light.

Fastusol Yellow RK, a new direct dye which is recommended primarily for dyeing cotton, rayon, and rayon staple.

Grease Solvent

A new water-soluble grease and oil solvent has been developed recently by Creative Chemical Co., 4620 Friendship Ave., Pittsburgh, Pa. This compound, called Creatasoap, is made in a highly concentrated liquid form which can be diluted with water to produce a solution for removing grease and oiliness from walls, floors, machinery, motors, etc. It is stated that the product is non-caustic, fumeless, and odorless. It can be applied by hand or sprayer.

NEW PUBLICATIONS

Cotton, as Agriculture

COTTON—CHANGES IN TECHNOLOGY AND LABOR REQUIREMENTS IN CROP PRODUCTION; by William C. Holley and Lloyd E. Arnold, Works Progress Administration, Washington, D. C.

This report on changes in technology and labor requirements of cotton production is the third in a series prepared by the Division of Social Research of the W.P.A.

The authors of this report compiled it from available publications of the U. S. Department of Agriculture and State experimental stations, supplementing this source material by a field study of the 14 most important counties in the cotton growing belt. It is a well done piece of work accompanied by fitting illustrations: photographs, charts, and tables. It covers the entire process of cotton production and in its closing summary lists the changes in the last 20 years in the labor requirements for producing the South's greatest crop, and gives the prospects for employment in the production of cotton due to mechanization and other technological improvements.

The report is entirely devoid of human interest and sure to get the razzberry from any dirt farmer who labors from "can't see, to can't see" if he should read that he worked only 178 to 253 hours to produce a bale of cotton for the period 1933–1936. It is, nevertheless, a perfectly good piece of academic findings and deductions.

Bearings for Textile Machinery

MODERN BEARING DESIGNS FOR SPINDLES; SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.; for limited distribution.

Numerous tables and charts of useful information are contained in this booklet, besides detail drawings of various bearings for textile machinery. Also, it contains information on bobbins and tubes and the dynamics of spindles.

Typical subjects discussed are power consumption, running properties, oil consumption, installation and maintenance of spindles, bobbin or tube seating, testing bobbins and tubes, tension pulleys for tape drives, tape slippage, speed variation, top drafting rolls, and anti-friction bearings for textile machinery.

Selling-Slants

"SAM VINING'S SELLING SLANTS; by Vernon E. Vining; Prentice-Hall, Inc., New York; Price $1.00

Short and snappy, educational and philosophical are apt descriptions of this handy volume.

We don't know Mr. Vining but we'd like to meet him. He has sold himself to us. And, if every salesman in the textile industry would read "Sam" Vining's Selling Slants they'd lift textiles out of its depression by their own sales talk. For, after all, what this country needs is salesmen who sell things.

It would probably repay textile executives to distribute copies of this book to their salesmen.

A Southern Tale

FLIGHT INTO OBLIVION by A. J. Hanna; Johnson Publishing Co., Richmond, Va. $2.75

The title to this gripping story so aptly states its theme that one classes it among those rare strokes that really amount to genius. A story about the fall and desperate flight

of the Confederate Cabinet, upon the evacuation of Richmond and the surrender of General Lee, which carries the reader southward through the present southern textile industrial section, is bound to be especially appealing to those who are so familiar with the route: Danville (which welcomed the group); Greensboro and Charlotte (where they were poorly received); Fort Mill (where Elliot White Springs' grandfather bountifully entertained the fleeing heroes); down through hospitable Georgia where Davis was captured; and into Florida, a refuge from whence some escaped to foreign shores.

TEXTILE WORLD readers will be interested in the tale of the poignant, romantic background of the part of the country now labeled as southern industrial sector.

Correction

In our recent review of the yearbook of the American Association of Textile Chemists & Colorists there was a typographical error in the price. The correct price is $3.50.

NEWS OF SUPPLIERS

Textile-Finishing Machinery Co., Providence, R. I., announces that, effective Dec. 31, James Cook of its southern office has resigned. H. G. Mayer, who has represented the company in certain territory in the South for many years, will continue as before. For the present Byram Scantland, who has assisted Mr. Cook, will assume direct charge of all work heretofore done by Mr. Cook assisted by such salesmen as may be sent temporarily from the New York or Providence offices.

Kaumagraph Co. will move its production headquarters to Wilmington, Del., sometime during this year. A modern four-story reinforced-concrete building is being made ready for the manufacture of Kaumagraph dry transfers, embossed seals, Prestomarks and lithographed packing.

L. Everett Taylor has become southern representative of the **National Ring Traveler Co.,** with headquarters in Charlotte, N. C. Mr. Taylor succeeds his father, the late C. D. Taylor.

Textile Machine Works, Reading, Pa., has begun the construction of a one-story addition to its machine shop at a cost of $100,000. This is the first addition built by the company since 1930.

Fidelity Machine Co., Philadelphia, has appointed Albert R. Breen, 80 East Jackson Boulevard, Chicago, Ill., as exclusive sales agent for the middle-western States of its line, including Fidelity Universal ribbers, tubular knitting machines, cylinders and dials, knitting attachments, braiding, winding and spooling machines. Mr. Breene will also represent the Sinfra knitted wire and cable covering machines. Albert R. Breen was an executive of the Universal Winding Co. for many years, and since 1934 had represented a number of important companies in the Middle West including Universal Winding Co., U S Bobbin & Shuttle Co., Sonoco Products Co., National Ring Traveler Co., Page-Madden Co., Inc. and others.

Norlander Machine Co., Gastonia, N. C., has appointed J. W. Long, Jr., as representative in Georgia, Alabama, Mississippi and Tennessee.

Alester G. Furman Co., Greenville, S. C. has admitted to the firm as special partners Harold O. Gaddy and Arthur C. McCall.

American Bemberg Corp., New York, has entered into a contract with the United States Testing Co., Hoboken, N. J., whereby the latter will without cost to the fabric manufacturer, test samples of dress fabrics made from Bemberg yarn. All fabrics which pass tests for serviceability may be classed as "certified" by and sold under the seal of approval of the United States Testing Co., and approved labels may be used by the fabric manufacturer.

Quaker Chemical Products Corp., Conshohocken, Pa., announces that Dr. Henry H. Gilmann, recently with Glyco Products, Inc. and City Chemical Corp., has joined its research staff. He will guide the development of resin finishes of all types, organic detergents, wetting agents and other organic synthesis. Robert Zametkin has joined the company's technical development staff.

Philadelphia Drying Machinery Co., Philadelphia, has appointed Albert R. Breen, 80 E. Jackson Blvd., Chicago, representative in Midwest territory.

Westinghouse Electric & Mfg Co., East Pittsburgh, Pa., has appointed Frank Howell Stohr manager of all industry sales departments.

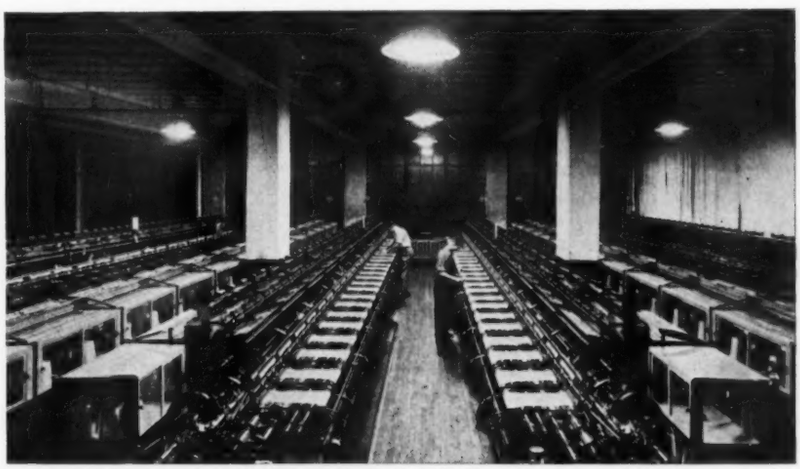
Henry Goodwin, recently with the sales force of SKF Industries, Inc., has joined the sales staff of **Steel Heddle Mfg. Co.,** working under the Greenville (S. C.) office.

Wollen Chemical & Supply Co., Paterson, N. J. has moved its offices and warehouse to a new location at Waite St. and Sixth Ave.

Shell Union Oil Corp., 50 W. 50th St., New York, has published in the January, 1939 issue of *Shell Progress,* an 8-page article on textile manufacture. Included is a series of excellent photographs which illustrate the various steps in production of yarns and fabrics at the plant of Marshall Field & Co.

J. N. Pease & Co., Charlotte, N. C., engineering, have been organized by Norman Pease formerly with Lockwood-Greene Engineers, Inc., and offices established in the Johnston Bldg. J. A. Stenhouse is associated with the firm.

American Maize Products Co., New York, reports that Herbert A. Kaufmann, with Stein, Hall & Co., Inc., for the last 12 years, has joined their production staff on Jan. 1, 1939. Mr. Kaufmann will be engaged in



Wayne Knitting Mills, Ft. Wayne, Ind., after installation of Westinghouse 250-watt combination high-intensity mercury-incandescent lighting units. Before the present equipment was installed only 14 foot candles were provided by 26 drop-cord fixtures. The seven new units do away with harsh shadows and provide 20 foot candles throughout the working area.

the production of dextrines and starches.

Monsanto Chemical Co., St. Louis, announces the promotion of Victor E. Williams, manager of the New York sales branch, to assistant general manager of sales. A. T. Loeffler, his assistant, has been promoted to succeed Mr. Williams as New York manager. C. F. Reeves has been made manager of the New York sales branch of the Plastics Division.

D. M. McSpadden and **James Cook,** both of Charlotte, N. C. have formed the firm of **Cook & McSpadden, Inc.,** sales engineers, with office in Johnston Building, Charlotte. Mr. Cook was formerly with Textile-Finishing Machinery Co., Providence, R. I., and Mr. McSpadden represents Reeves Pulley Co. of Columbus, Ind. The new firm, which opened for business Jan. 1 this year, will represent Reeves Pulley Co.; Andrews & Goodrich, Inc., Dorchester, Mass.; Baldwin-Duckworth Chain Corp., Springfield, Mass.; Morrison Machine Co., Paterson, N. J.; and National Vulcanized Fibre Co., Wilmington, Del.

Chas. T. Main, Inc., engineers, Boston, are distributing in booklet form reprints of the address entitled "20 Years of Machinery Activity in the Woolen and Worsted Industry of the United States," delivered by A. W. Benoit, of that organization, before the Textile Session of the American Society of Mechanical Engineers in New York in December. The booklet includes the graphs presented by Mr. Benoit. This address was summarized in our January issue. It is the company's hope that the presentation of the data in booklet form will lead to further discussions and studies which will be of assistance in putting the industry on the road to prosperity.

Howard Bros. Mfg. Co., Worcester, Mass., are opening a manufacturing branch at Gastonia, N. C. Carl M. Moore, of Charlotte, will be in charge.

Industrial West, Inc., San Francisco, presents the prospects for the development of rayon and other textile industries in the 11 far-western States in one section of a two-volume report on the industrial resources of that region. Industrial West, Inc., is a cooperative non-profit organization established to compile data for use in exhibits at the Golden Gate International Exposition at San Francisco. The report was prepared at a cost of $135,000 with the cooperation of many State and Federal agencies and bureaus. Treated in detail are the forestry and other resources of the West which have a bearing on the textile industries.

Cutler-Hammer, Inc., Milwaukee, Wis., has promoted E. W. Seeger to chief engineer and P. B. Harwood to assistant chief engineer. Mr. Seeger was assistant chief engineer and Mr. Harwood general engineering supervisor. Mr. Seeger became associated with Cutler-Hammer in 1913, and Mr. Harwood in 1917.

E. W. Seeger, Chief Engineer, and P. B. Harwood, Assistant Chief Engineer, Cutler-Hammer, Inc.

Draper Corp., Hopedale, Mass., is constructing two one-story additions to its plant, 30x520 ft. and 30x130 ft., respectively, for a foundry and for the storage and distribution departments.

Crompton & Knowles Loom Works, Worcester, Mass., has begun shipping an order for 300 rayon looms to one of the large English textile plants, according to John F. Tinsley, president and general manager.

Carbide and Carbon Chemicals Corp., New York, reports that H. B. McClure of that company gave a paper on "Industrial Applications of the Glycols" before the meeting of the American Association for Advancement of Science, at Richmond, Dec. 27. In the textile industry, Diethylene glycol is used as a lubricant for worsted fibers during the manufacture of yarn, and also in soaking of raw silk.

Scheuer & Co., textile brokers and consultants, New York, are distributing the 1938 edition of their Comparative Textile Chart, which has been issued for many years. A new feature is the section showing the annual production and consumption for the country of cotton cloth, rayon yarn and rayon staple fiber. Prices, raw material costs, and mill margins of two staple rayon constructions are presented in a new graphic form which facilitates interpretation. The cotton section includes, among other material, a price history of 64 x 60 38½" 5.35 print cloth for 1926 to 1938, inclusive.

Foster Machine Co., Westfield, Mass., has established an office at 1314 Johnston Building Charlotte, N. C., with Mrs. Richard Ensign in charge. Mrs. Ensign's husband represented the company in the South until he was killed in an automobile accident about two years ago. Edward G. Connor, special representative of the company, will make his headquarters there; as will also Webb Durham, recently appointed southern sales manager.

Hooker Electrochemical Co., Buffalo, N. Y., as a tribute to the founder of the company, has recently issued a booklet "Elon Huntington Hooker." This booklet can best be described as an appreciation of the contributions of the late Mr. Hooker to the advancement of science and human service. It traces his career and his achievements in the field of electrochemistry, industry, and public service.

Keever Starch Co., Columbus, Ohio, has just completed a new laboratory building to house one large laboratory for general routine tests and three small laboratories for experimental and development work. It is shown above. B. J. Williamson, factory superintendent, I. C. Coleman, assistant superintendent, L. M. Thomas, chief chemist and chemists George M. Bierly, W. E. Nader, J. W. Todd, J. K. Rosso, are the men responsible for the quality of Keever starches and sizes.

THE PERSONAL PAGE

Charles Slaughter

Charles Slaughter, of Slaughter, Horne & Co., New York, has been elected president of the Commodity Exchange, Inc., New York, succeeding **Floyd Y. Keeler. Douglas Walker** was re-elected a vice-president of the Exchange to represent the silk group.

Wyllys H. Taylor has been elected president of the Newnan (Ga.) Cotton Mills, succeeding **R. Hill Freeman,** who resigned because of ill health and was elected chairman of the board. **R. O. Jones** is vice-president and **W. B. Hill,** secretary-treasurer.

Charles E. Lotte has been elected president of the National Dyeing & Printing Co., Paterson, N. J. He succeeds the late **Charles L. Auger, Sr.**

Thomas B. Hill has been appointed to head a new commission agency division established by Cheney Bros., New York, where he will be associated directly with **Ward Cheney,** president of the company and **Franklin G. Griffin,** vice-president in charge of sales, in developing a diversified line of merchandise and broadening the firm's activities. Mr. Hill was with the firm of C. K. Eagle & Co. for 21 years, of which he served 12 years as president. He also served two terms as president of the old Silk Association of America. For the last two years he has been engaged in textile brokerage and as a textile consultant.

Walter Dickinson, for many years head of Frederick Almy & Co., New York, retired to private life on Jan. 1. He is 70 years old this month, and his 52 years in business have been spent entirely with the one firm, where he began as office boy at the age of 17.

W. W. Weed, head of the Kenwood Mills at Arnprior, Ontario, since 1919, has been appointed president of the parent firm, F. C. Huyck & Sons, Rensselaer, N. Y.

P. H. Hanes, president of P. H. Hanes Knitting Co., Winston-Salem, N. C., has been elected a director of the National Association of Manufacturers.

Edward J. McMillan, president of the Standard Knitting Mills, Knoxville, Tenn., is the new president of the Southern States Industrial Council.

A. G. Myers, president of Textiles, Inc., Gastonia, N. C., was re-elected president of the Citizens National Bank.

M. W. Walker, who has been treasurer and office manager of the Harriman (Tenn.) Hosiery Mills for the last 20 years, has been elected president, succeeding the late Tom Tarwater. **J. L. Tarwater,** for 10 years superintendent of the finishing department of the mills, has been elected executive vice-president and general manager, and **T. A. Wright, Jr.,** of Knoxville, Tenn., is vice-president and secretary.

Gardiner Hawkins has been elected a vice-president of Deering Milliken & Co., Inc., New York. He will continue in charge of the fancy goods department.

Paul A. Fabian, for more than ten years identified in an executive capacity with the Uncas Finishing Co., for the last seven years agent at its Mechanicsville, Conn., plant, has resigned, to become agent of the Arkwright Finishing Co.'s plant at Fall River, Mass.

J. E. Millis, president of the Adams-Millis Corp., which operates hosiery mills at High Point, Tryon and Kernersville, N. C., was elected chairman of the board of governors of a new $400,000 hospital to be erected in High Point.

Dennis T. Noonan has been re-elected president and elected treasurer of the Berkshire Woolen Co., Pittsfield, Mass. As treasurer he succeeds the late James R. Savery.

Nat Black has resigned as vice-president of the Preston Piece Dye Works, New York.

Fred L. Smyre, Jr., has become treasurer of A. M. Smyre Mfg. Co., Ranlo, N. C.

Lanier Branson, for 15 years president of Graniteville, (S. C.) Mfg. Co., will resign this position at the meeting of the stockholders and directors in February to devote his time to his new textile business. He will continue to make his home at Aiken, S. C.

Howard R. Hart has been elected vice-president in charge of production of the Southern Brighton Mills, Shannon, Ga. He resigned as general superintendent of the Greenwood, Mathews & Ninety-six Mills about the first of the year, and assumed his new duties Jan. 15. Mr. Hart is moving his home from Greenwood, S. C. to Rome, Ga. **A. B. Hull, Jr.** has been promoted to the position of vice-president in charge of development by the Southern Brighton Mills.

A. R. Manahan, formerly with Susquehanna Silk Mills, New York, has joined the William Basser Textile Corp., New York.

C. Tremblay, secretary-treasurer of Ayers Limited, Lachute Mills, Quebec, was last month re-elected president of the Canadian Woolen & Knit Goods Manufacturers Association at the meeting held in Toronto. **Earl Constantine,** president, National Association of Hosiery Manufacturers, spoke before the annual meeting of that body.

Albert E. Robinson has been elected vice-president of the Benrose Silk Corp., New York, with which he has been affiliated for 13 years, having charge of the technical end of the organization.

BELIEVE IT OR NOT

George A. Sloan, former president of the Cotton-Textile Institute, bagged a coyote from a blimp in Arizona recently. Following a board meeting of the Goodyear Tire & Rubber Co. at Litchfield Park, Arizona, he went as one of a hunting expedition. The blimp was flying 50 miles an hour and about 200 feet from the ground. They chased this particular coyote for half an hour before the pilot could maneuver the blimp into a position where Mr. Sloan could get a good shot. They then radio-telephoned back to the ground crew some 15 miles away and a group of cowboys rode out to pick up the loot.

Bachrach

G. E. Hopkins

Giles E. Hopkins has submitted his resignation, effective April 1, 1939, as technical director of the Bigelow-Sanford Carpet Co., Inc., Thompsonville, Conn., to accept a position with the United Shoe Machinery Corp. Mr. Hopkins went with Bigelow Hartford as chemical engineer in January, 1929, and was appointed technical director in April 1931. He was active in the affairs of the American Society for Testing Materials, the Industrial Research Institute associated with the National Research Council, and the United States Institute of Textile Research. He served on the executive committees of the A.S.T.M. and I.R.I. and was a director of the U.S.I.T.R.

Walter Lewis has been appointed sales manager of M. J. Whittall Associates, Worcester, Mass. He succeeds **Frank Hansa** who has resigned.

Henry Maier has resigned as sales manager of the dress goods and velvet department at Cheney Bros., New York, with which firm he has been associated for eight years.

Claude I. Ruth, formerly vice-president of the William G. Leininger Knitting Co., Mohnton, Pa., has been elected president of that firm to succeed the late W. G. Leininger.

George F. Reynolds, recently with the Old Town Woolen Co., is now associated with Robert W. Hamilton, New York, in the selling of novelty fabrics for the sportswear trade.

Harold J. Farrell, for the last three years auditor of Farr Alpaca Co., Holyoke, Mass., has been appointed comptroller to succeed **David H. Martin,** who resigned Jan. 15. **Edward C. Purrington,** secretary of the Farr company, has resigned

as a director and has been succeeded in that office by **Harvey L. Titus,** Lexington, Mass. Mr. Purrington continues as secretary. **George E. McCarthy** has resigned as general superintendent to resume his position as head of the Penn System & Audit Co., industrial engineers and accountants, with offices in Philadelphia and New York. **William Bell, Jr.,** superintendent of the shipping and building departments, has been appointed assistant secretary to Governor Leverett W. Saltonstall, who took office Jan. 5. **Leon M. Yoerg,** president of the American Writing Paper Corp., Holyoke, Mass., was named a director of the Farr Alpaca Co., succeeding **Dr. S. A. Mahoney,** who resigned.

George Ward has been placed in charge of the work clothing fabrics of Southeastern Cottons, Inc., New York, following the division of that concern's colored goods department. **George Elliott** is head of the flannels department; **Donald Comer, Jr.,** tickings; **W. T. Harris,** men's suitings; **R. E. Reeves, Jr.,** draperies; **George F. Johnston,** towels and blankets; **Norman Greenlaw,** dress goods.

Robert S. Thompson, secretary of Kenneth Cotton Mills, and **J. R. Clark,** superintendent of the same company, Walhalla, S. C., are officials of the newly-organized Royal Textiles, Inc., Walhalla.

Carl A. Rudisill, Cherryville, N. C., secretary and treasurer of the Carlton Yarn Mills, Inc., Nuway Spinning Co., and an official of other mills, has been elected a member of the North Carolina legislature.

H. J. Griffis has become secretary of Sibley-Enterprise Co., Augusta, Ga.

S. M. Harrison has become secretary of Echota Cotton Mills, Calhoun, Ga.

Fred W. Lucas, of Cook & Co., Memphis, Tenn., was elected president of the Memphis Cotton Exchange for 1939 on Jan. 11. **A. H. Bower** was re-elected secretary.

J. C. Cirkle, formerly superintendent of the Durham (N. C.) Cotton Mfg. Co., has become assistant manager and superintendent of the Willinca Cotton Mills, Marietta, Ga.

James Sheppard, Jr., general manager and director of Rhode Island Woolen Co., Stafford Springs, Conn., has resigned. He has been succeeded by **A. Philip Jarvis.**

D. L. LaMar has become secretary-treasurer of the Worth, Gastonia and Ranlo (N. C.) plants of the Ranlo Mfg. Co.

Walter A. Mohr has been elected a vice-president of James Talcott, Inc., New York.

Harold W. Leitch

Francis P. Madden

Harold W. Leitch, general superintendent of the Worsted Division, Pacific Mills, Lawrence, Mass. and **Francis P. Madden,** New England sales representative for McCampbell & Co., Exeter Mfg. Co. and Windsor Print Works, have been appointed for three-year terms as trustees of the Lowell (Mass.) Textile Institute. Both men are graduates of the school and have careers in the textile industry dating back more than 20 years. Mr. Leitch after graduation spent three years as instructor at Lowell. He was later associated with the Brightwood Mfg. Co. and with M. T. Stevens & Co. He joined Pacific in 1928. Mr. Madden took a course in law school, and has since devoted his business career to sales work associated with the textile industries.

F. E. Vantine, treasurer of the Great Falls (S. C.) plant of Republic Cotton Mills, has been named vice-chairman of the organization and inter-racial committee of the Chester county unit, Boy Scouts of America.

Arthur K. Stewart, former agent of the American Thread Co. in Westerly, R. I., has been put in charge of manufacturing of the Holyoke division to be reopened shortly.

Arthur W. Cole has been elected vice-president of the newly reorganized M. J. Whittall Associates, Worcester, Mass. Mr. Cole supervised styling and selling of this firm's products during their years of success and comes back to the company after a number of years of retirement.

James J. Hoyne, for several years sales manager of the upholstery department of Sidney Blumenthal & Co., New York, became general sales manager of the company on Jan. 1. He is succeeded in the upholstery department by **Valentine J. Harper.**

Walter W. Williams, general manager of the E. M. Holt Plaid Mills, Burlington, N. C. and of the Virginia Cotton Mills, Swepsonville, N. C., has resigned from the latter plant to concentrate on the plant at Burlington. **J. R. Copland,** production superintendent of the Plaid Mills has been transferred to a similar post at the Virginia Cotton Mills, where he will be assisted by **A. B. Williams** who also comes from the plant at Burlington.

Arthur D. Whiteside, president of Dun & Bradstreet, New York, will be the chief speaker at the dinner of the Textile Salesmen's Association at Hotel Pennsylvania, Feb. 21.

Dr. Olin Sawyer, physician and veteran South Carolina legislator, of Georgetown, S. C., has been given a temporary appointment as director of public relations for the Cotton Manufacturers Association of South Carolina, by **William P. Jacobs,** secretary.

F. G. Carroll, formerly with Judson Mills, and **F. C. Wedler,** recently with Hampton Co., are now associated with the American Viscose Corp., New York, on the technical staff to cooperate with mills. The sales development department is now headed by **E. S. Kennedy** assisted by **K. M. Currier.**

William H. Barnewall has been made sales manager for Hartsville (N. C.) Print & Dye Works.

James Clendening, of Marshall Field & Co., has joined J. P. Stevens Co., New York, associated with the rayon fabrics division.

T. A. Ballard, superintendent of Bladenboro (N. C.) Cotton Mills, has resigned.

George H. Watts, overseer of weaving at Lockwood Co., Waterville, Me., has resigned and been succeeded by **Mr. Horsfall.**

Constant Scholer, head of the New York School of Textile Technology, was elected president of the American Association of Textile Technologists at their annual meeting Jan. 12. **Joseph Meierhans,** of Farr Alpaca Co., was elected first vice-president.

Nat Sussner, associated with the International Dye & Print Works, has been elected president of the Salesmen's Association of the Textile Dyeing & Printing Industry.

R. G. Woodbury of the Textile Banking Co., New York, has been elected executive chairman of the Uptown Credit Group, affiliated with the National Federation of Textiles.

John McLeod has been appointed sales manager of the men's and boy's division of Munsingwear, Inc., Minneapolis, Minn.

Theodore Mattmann has joined Fahnestock & Co., New York, where he will organize and head a commodity trading department.

Edward L. Odegaard has resigned as vice-president and head of the colored goods division of Southeastern Cottons, Inc., New York.

Jerome P. Donnelly has resigned as manager of the Williamsport, Pa., plant of the National Dyeing & Printing Co. and been succeeded by **Julius Plucker, Jr.**

George R. Sullivan for many years New England representative for Sulloway Hosiery Mills, is now associated with the Moorehead Knitting Co., Harrisburg, Pa.

Arthur L. Nichols, of Biddeford, Me., and Mrs. Nichols, have left for the Philippine Islands to begin work at Manila in instructing employees of the National Development Co. in how to use its new cotton spinning machinery, much of which is from Saco-Lowell Shops. The company is government-owned and is trying to manufacture cotton goods in the Philippines to compete with Japanese materials.

John M. Ulmer, recently associated with the Old Hickory (N. C.) rayon unit of E. I. du Pont de Nemours & Co. has been promoted to the sales department of the company with headquarters at Charlotte, N. C.

C. E. Ware has become superintendent of Abernathy-Houser Mfg. Co., Statesville, N. C.

Herbert E. Fulton has resigned as head of the finishing department of the Sanford (Me.) Mills. He is succeeded by **Hinkley Sweet.**

Frank S. Hathorn, has resigned as superintendent of the Stillwater Plant of the Ballston-Stillwater Knitting Co., Ballston Spa, N. Y., to become county under-sheriff. He is succeeded at the mill by his son, **Frank S. Hathorn, Jr.** who for seven years has been his assistant.

Allen Dennis, superintendent of the No. 1 Mill of Bibb Mfg. Co., Macon, Ga., has been transferred to the general superintendent's office and succeeded by **P. E. Findlay, Jr.,** recently superintendent of the Payne Mill of the company. **F. P. Jenkins,** assistant superintendent at Columbus, has been transferred to Payne as a successor to Mr. Findlay. **R. E. Henderson,** formerly overseer of the twister room at Columbus, has been promoted to assistant superintendent, replacing Mr. Jenkins.

Alfred H. Randall, assistant general superintendent for the last eight years of Alabama Mills, Inc., Birmingham, Ala., has been promoted to be general superintendent, succeeding **L. H. Rice,** who has resigned after seven years in this office.

Joe Neal has become superintendent of the Sellers Mfg. Co., Saxapahaw, N. C.

Leo VanKeet, dyeing department overseer at Sulloway Mills, Franklin, N. H., has also taken charge of stocking board work, to succeed **Irving Davis,** who has retired. **Edwin L. Kelton,** carding room overseer at Sulloway, has been given charge of all manufacturing and processing of yarn. **Waldo A. Young,** who has been retail store manager, has been appointed overseer of the seamless knitting department.

W. L. Brantley has become superintendent of the McComb (Miss.) plant of the Mobile Cotton Mills, succeeding **S. W. Armstrong.**

H. W. Loeper has become superintendent of Cayuga Linen & Cotton Mills, Lexington, N. C.

Eugene Boms, weaving foreman at Bernson Silk Mills, Inc., Buena Vista, Va., discussed silk, its manufacture and its uses at a meeting of the Buena Vista Lions Club, last month.

J. E. Smith, formerly of Woodruff, S. C., is now assistant superintendent of Laurens (S. C.) Cotton Mills.

R. M. Jordan has become superintendent of Talladega (Ala.) Cotton Factory.

T. J. Culpepper, Jr., has become superintendent of the Eagle & Phenix Mills, Columbus, Ga.

C. L. Henry is now overseer of carding at Santee Mills, Orangeburg, S. C.

T. A. Ballard has resigned as superintendent of Bladenboro (N. C.) Cotton Mills.

J. L. Sherrill has become superintendent of Ross Fabrics, Inc., Morganton, N. C.

G. G. Smith has resigned as superintendent of A. Leon Capel Mill, Troy, N. C., and has been succeeded by **J. S. Smitherman.**

Obituary

Dr. Charles A. Ernst, 67, associated with rayon manufacture in this country since its inception, died at Ridley Park, Pa., Jan. 31. He was chemist with the General Artificial Silk Co., Lansdowne, Pa., at its start in 1902. In 1909 he went abroad to join Courtauld's and in 1911 returned as head chemist of American Viscose Corp.'s new Marcus Hook plant. He was president of the company from 1921 to 1925 when he retired.

Howard R. Townsend, 67, head of the hosiery firm of Townsend & Strickler, New York, died Jan 6. He was previously a member of the old firm of E. M. Townsend & Co., founded by his father more than 50 years ago.

Artemus O. Murphy, 83, for a number of years head of the Georgia Underwear Co., Barnesville, Ga., died early last month.

Edward Doerken, 71, for 30 years treasurer of the Audiger & Meyer Silk Co., Paterson, N. J., died recently.

Eugene Deady, yarn superintendent at the Manton Mills of the American Woolen Co., where he had been employed for more than 40 years, died Dec. 29. Mr. Deady was 71 years old.

Augustus R. Laucks, 67, general superintendent of the Textile Chemical Co., Reading, Pa., died late in December.

David Karger, 65, president of the Eagle Knitting Mills, Milwaukee, Wis., died Jan. 2. He was serving his sixth term as president of the western district of the Knitted Outerwear Manufacturers Association.

Harold W. Bloomquist, 65, manager of the former Forncliff Worsted Mills, Jamestown, N. Y., died Jan. 10.

Harry W. Sheeler, 73, proprietor of the IXL Hosiery Mill, Robesonia, Pa., died Jan. 19. He founded his hosiery business in 1890.

Edward L. Wingate, 34, assistant superintendent and former sales manager in the webbing and narrow fabric division of the Russell Manufacturing Co., Middletown, Conn., died Jan. 18.

Albert H. Hill, an overseer at Jackson Mills, Nashua, N. H., for 27 years, died in that city Dec. 29.

Benjamin Preston Clark, 78, president of the Plymouth (Mass.) Cordage Co., and long prominent in Massachusetts business and philanthropic circles, died at his Boston home on Jan. 11.

Nelson Kershaw, 82, for many years head of a towel mill operating under his name at Clifton Heights, Pa., and a pioneer in terry cloth manufacture, died at Drexel Heights, Pa., Jan. 24.

William C. Marble, 77, vice-president and secretary, Curtis & Marble Machine Co., Worcester, Mass., died Jan. 23. He had been with the company 55 years.

James E. Stanton, Jr., 75, president, Hathaway Mfg. Co., New Bedford, Mass., died Jan. 26. He was associated with the textile industry for over 45 years having been president of the City Mfg. Co. and treasurer of the Acushnet as well as general manager of the New England Cotton Yarn Co.

Howard A. Walter, a chemistry instructor at Philadelphia Textile School for the last 23 years died Jan. 21.

William G. Kitchen, 62, president, Joseph Scatchard's Sons, Inc., Philadelphia, Pa., died Jan. 26. He was associated with the wool industry for 45 years and the asbestos industry for 20, being also senior partner of James G. Kitchen & Co., and president of Allbestos Corp.

John T. Slack, 81, one of the organizers of the John T. Slack Corp., shoddy manufacturers, Springfield, Vt., died at his home in that place Jan. 17. He entered into partnership with his brother, the late W. H. H. Slack, in 1889, and in 1911 a merger was formed which established one of the largest plants in the world for re-working wool. He retired in 1922.

Gerald Cooper, 84, long prominent as a pioneer in the mercerizing of cotton yarns and development of machinery for such work, and president of Cooper-Kenworthy Co., Providence, R. I., died at Charlotte, N. C., Jan. 19.

William H. Jollie, 66, purchasing agent for Lorraine Mfg. Co., Pawtucket, R. I., for 37 years, died Jan. 18.

James A. Campbell, 74, for many years secretary and treasurer of the worsted yarn spinning firm James Doak, Jr., Co., Philadelphia, died Jan. 16.

Frederick Steere Beattie, 56, member of the faculty of Lowell Textile Institute, Lowell, Mass., for 25 years, died Jan. 12.

Peter J. Hinds, retired director and vice-president of the American Thread Co., Willimantic, Conn., died at Westfield, N. J., Jan. 17. He was appointed general superintendent of the Willimantic plant in 1920.

William Oliver Rockwell, 87, who retired several years ago from Cyril Johnson Woolen Co. and who was for 25 years treasurer of Central Woolen Co., Johnson's predecessor, died Dec. 26 at Stafford Springs, Conn.

William H. Wye, 78, for many years a manufacturer of sweaters at Needham, Mass., died at the Weymouth (Mass.) Hospital on Jan. 3. He was a native of Leicester, England, and retired about ten years ago.

Charles P. Nunn, 83, former president of the Boston Wool Trade Association and a retired merchant, died recently at Boston.

Arthur E. Gill, 85, formerly senior partner of Dewey, Gould & Dike Co., and at one time president of the Boston Wool Association, died at his home in West Newton, Mass., on Jan. 8.

W. Amos Harrill, aged 75, president of Grace Cotton Mill, Rutherfordton, N. C., died recently.

John W. Bolton, 79, founder of John W. Bolton & Sons, Inc., Lawrence, Mass., died Jan. 7.

Albert W. Slocum, 72, agent for 15 years of Cocheco Woolen Mfg. Co., East Rochester, N. H., died Jan. 18 in Florida. He had retired three years ago.

B. F. Aderhold, 80, a founder of the old Toccoa (Ga.) Cotton Mills, now the Hartwell Mills, died recently.

Harold Remington Barker, 56, Fall River, New England agent for the yarn product of Cannon Mills, died in Fall River, Mass., Jan. 13. He was previously with O. S. Hawes & Bro.

William Harrop, 69, for a number of years superintendent of the Taunton, Mass., plant of the New England Cotton Yarn Co. and subsequently general manager of American Cotton Fabric Corp., died Jan. 19 in New Bedford, Mass.

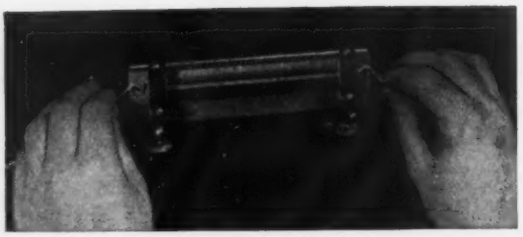
Horace A. Fifield, general superintendent of Empire Cotton Mills Ltd., Welland, Ont., for the last 14 years, and previously with B. B. & R. Knight, died suddenly in the mill offices, recently.

James Oliver Hodges, 48, superintendent of Southland Knitting Mills, Macon, Ga., died Jan. 21.

Joseph J. Mara, 68, employment manager of the Southern Brighton Mills, Shannon, Ga., died Jan. 19.

Haley R. Duren, 60, overseer of the cloth room of Columbia (S. C.) Mills, died suddenly Jan. 4.

SCOTT TESTERS



What it is:—

A simple stand holding an unusual form of magnifying glass.

What it does:—

Allows the observer while sitting upright to see with both eyes 5 inches of yarn at 8 magnification. This unusual form of lens magnifies the diameter direction only, which accentuates irregularities of twist, diameter and general appearance.

How it is used:—

The specimen of yarn is placed in the guides beneath the glass. The operator draws the yarn along and readily notes the uniformity or irregularity of the yarn.

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CLINTON STARCHES

For All Textile Purposes

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CLINTON, IOWA

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MILL NEWS

Cotton Mill News

Samoset Cotton Mills, Talladega, Ala., have awarded contract to Dixie Flyer & Spindle Co., Charlotte, N. C., for revamping and overhauling mill equipment.

Adams Mfg Co., Shelton, Conn.—Local mill of this company with machinery and equipment has been sold at a public liquidation sale.

Goodyear Clearwater Mills, Cedartown, Ga., plan one-story addition to local plant, with installation of equipment.

Muscogee Mfg. Co., Columbus, Ga., announces plans for an expansion program involving a new water filtration system.

Winville Corp., Lawrenceville, Ga., carded yarn manufacturers, has been sold to Otto F. Feil of Atlanta, Ga., and the plant will be liquidated.

Dwight Mfg. Co., Boston, reports net loss of $42,555 for year ended Nov. 30, against net profit of $621,652 for previous year.

William Lapworth & Sons, Inc, Milford, Mass., have been chartered with capital of $60,000, to take over and operate company of same name, with local mill.

Naumkeag Steam Cotton Co., Salem, Mass., reports net profit of $125,424 for fiscal year ended Nov. 30, 1938, against a net profit of $341,868 for 1937. Dollar sales shrank 27% to $6,215,972 in the same period.

Aponaug Mfg. Co., Natchez, Miss., which formerly operated 23,376 spindles and 629 looms, has discarded all but 12,000 spindles.

Tupelo (Miss.) **Cotton Mill**—Sale of this mill's machinery has been authorized to Upchurch & Son, Athens, Ga., for $52,500.

Central Falls (N. C.) **Mfg. Co.,** has sold nearly all of the dwellings in the mill village to the operatives.

Henrietta Mills, Caroleen, N. C., reports net loss of $356,431 for fiscal year ended Oct. 1 compared with net profit of $251,360 for previous year. Sales shrank 62% to $1,625,385 in that period.

Carolina Webbing Co. and **Southern Webbing Mills, Inc.,** both Greensboro, N. C., have arranged for a merger, and will concentrate production at mill of last noted company.

Henderson Cotton Mills and **Harriet Cotton Mills,** both of Henderson, N. C., with S. P. Cooper, president of both, announce plans for a modernization program, which will include the installation of new machinery, etc.

Lenoir (N. C.) **Cotton Mill** property was sold at auction for $19,000 to a group of local business men.

Hope Valley Mills, Inc., Hopkinton, R. I., recently organized, have acquired part of former local plant of Nichols & Langworthy Machine Co., and will modernize and equip for new mill on braids and allied specialties. About 2000 braiding machines and auxiliary equipment are being installed.

Branson Co., Aiken, S. C., has been formed by Lanier Branson, formerly president of Sibley-Enterprise Co., Augusta, Ga.

Joanna Cotton Mills, Goldville, S. C., have work in progress on changing 89,923 spindles to long-draft equipment; also will install other equipment, including 9 one-process pickers of blending reserve type.

Springs Cotton Mills, Lancaster, S. C., is installing 600 looms in its newly completed 3-story addition, bringing the total looms to 7000.

Santee Mills, Orangeburg, S. C., have recently completed the installation of one 60 hp. and one 300 hp. Ingersoll & Rand diesel engines of the valve-in-head type.

Union-Buffalo Mills Co., Union, S. C., reports net loss of $212,235 for year ended Sept. 30, compared with net profit of $832,826 for the preceding year.

Riverside & Dan River Cotton Mills, Danville, Va., report net loss for 1938 of $1,017,228 against net profit for 1937 of $1,270,465. Sales were off 29%.

Nalvin & Sons, Inc., Clifton Forge, Va., will enlarge their narrow fabric plant in Cliftondale Park.

Wool Mill News

Pondicherry Woolen Mill, Bridgton, Me., was reopened after a long shut down and a skeleton crew started work on samples for the Kaufman Co., New York, which recently leased the long-idle mill.

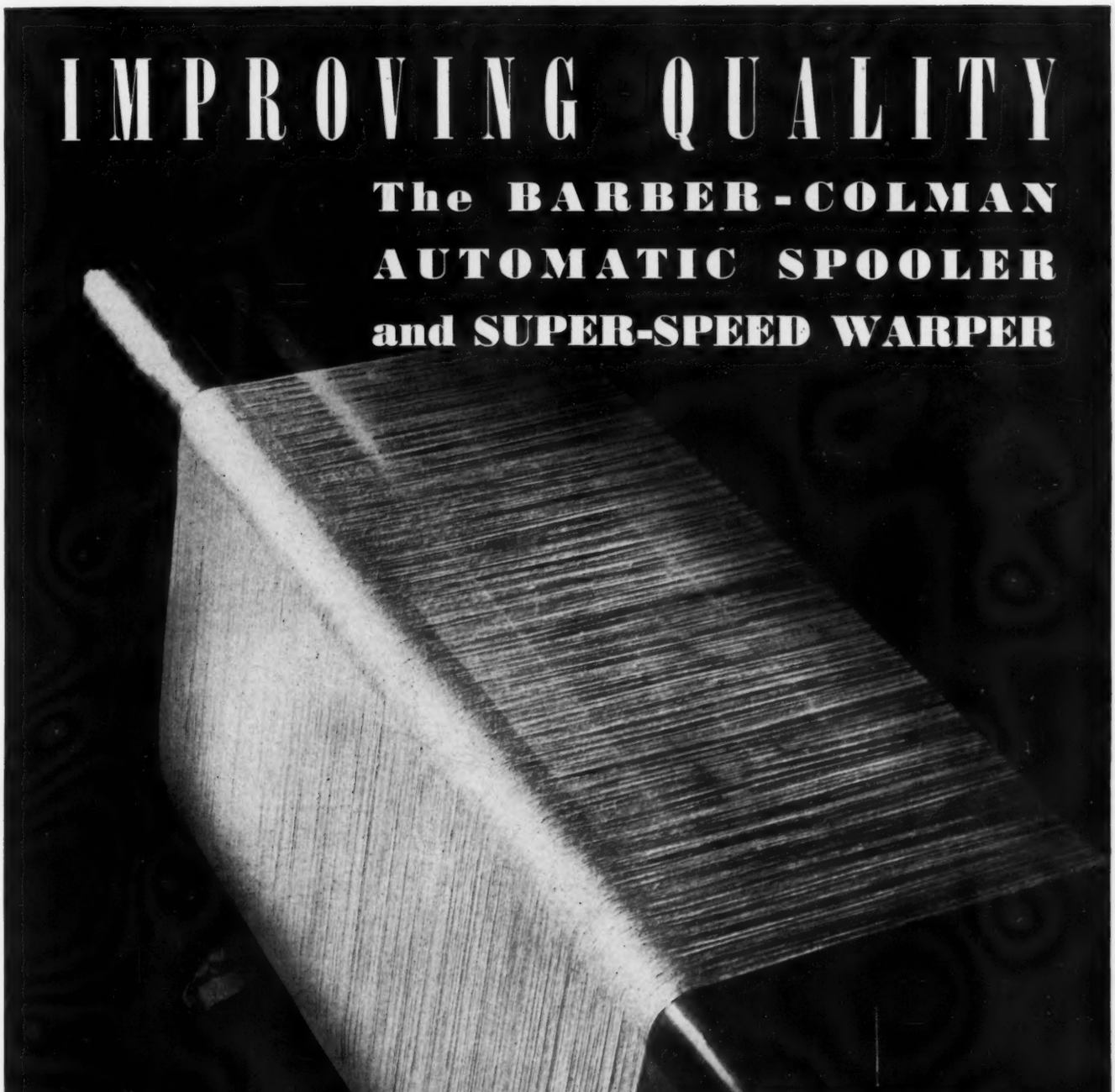
Sanford (Me.) **Mills** report net profit for fiscal year ended Nov. 30 of $179,479 compared with $1,432,286 for previous similar period.

Arlington Mills, Lawrence, Mass., report net loss for year ended Nov. 30 of $818,399 against net profit for previous fiscal year of $342,464. Sales were off 45%.

Holyoke (Mass.) **Worsted Mills, Inc.,** opened its new

IMPROVING QUALITY

The BARBER-COLMAN AUTOMATIC SPOOLER and SUPER-SPEED WARPER



LOW and UNIFORM TENSION, characteristic of the Barber-Colman System of Spooling and Warping, shows its advantages at the whip roll of a loom. Retention of elasticity reduces warp breakage.

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HAVE YOU USED THIS WAY TO MORE RAPID WETTING-OUT?

If you have, you *know* that SURFAX W.O. wets out faster, costs less, can be used in lower concentrations . . . and operate more satisfactorily and economically than other "wetting-out" agents. If you sanforize, you *also* know that SURFAX W.O. is the fastest and most suitable product for this process . . . and that as a softener it is unsurpassed!

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E. F. HOUGHTON & CO.

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MILL NEWS

dyeing and finishing department last month.

Cavedon Spinning Co., Worcester, Mass., is now in process of liquidation.

National Felt Products Co., Ypsilanti, Mich., recently organized by Alfred T. DeOtte, 14 North Washington St., and associates, plans early operation of a local mill.

Botany Worsted Mills, Passaic, N. J., has taken over the Keyser (W. Va.) Worsted Mill, idle for some time past, and will start up operations. Certain equipment will be removed to the plant.

Chatham Mfg. Co., Elkin, N. C., has broken ground for the foundations of new brick and steel addition, that will cost approximately $20,000.

Portland (Ore.) **Woolen Mills** have taken out a permit for improvements in electrical department, including switchboard installation and other work.

Worcester Textile Co., Inc., Valley Falls, R. I., has been purchased by Sidney Blumenthal & Co., New York, N. Y., which exercised an option to acquire the property held for a number of months. Purchasing company has operated the plant since 1936.

Norris Mfg. Co., Chick Springs, S. C., (near Greenville, S. C.) has established a plant for the manufacture and sale of men's and women's sports wear. G. Furman Norris, of Greenville, is president.

Uvalde (Tex.) **Wool & Mohair Co.** has begun erection of one-story addition, 80 x 210 ft., by day labor, and will use for warehouse. Cost estimated close to $40,000.

Guelph Carpet & Worsted Spinning Mills Ltd., Guelph, Ontario, has installed a small plant for making unshrinkable woolen and worsted yarns by the Drisol process invented by A. J. Hall, of England. Yarns will be made for the hosiery and knit goods producers in Canada.

Rayon & Silk Mill News

Carol Ribbon Mills, Inc., Attalla, Ala., have been dissolved and the machinery installed in the **Benj. Kahn Ribbon Mills, Inc.,** Attalla.

Nylon Division, E. I. du Pont de Nemours & Co., has broken ground at Seaford, Del., for $8,000,000 plant. The building is to be 1000 x 300 ft., steel and concrete, and air conditioned.

Union (Miss.) **Silk Thread Co.** has begun operations, with James Chapman, manager.

Straight Silk Mills and **Main Silk Co.,** Paterson, N. J., have bought plant of Better Made Silk Co. after inspection by John Picone. The added machinery gives Straight 84 looms and Main 60, all C. & K.

Doherty & Wadsworth Co., silk and rayon weavers, in reorganization, will maintain its plant at Paterson, N. J., but abandon its mills at Wilkes-Barre and Allentown, Pa. Plan was approved by Federal Judge Guy L. Fake.

American Viscose Corp., New York, N. Y., has placed contracts with Fischer Machine Co., Philadelphia, Pa.; Pusey & Jones Co., Wilmington, Del.; and Walker Machine & Foundry Co., Roanoke, Va., for special spinning machines and auxiliary equipment for installation in new mill at Front Royal, Va., on which work is now in progress.

Belding-Heminway Co., reports estimated profit for 1938 of $320,000, compared with $490,000 for 1937.

Colonial Mills, New York, N. Y., has taken over former mill of Charles D. Thoms & Co., Inc., Red Springs, N. C., known as the Charles Mill, and will remodel and equip for new branch mill. A new one-story addition will be built, totaling about 40,000 sq. ft. Installation will include about 450 looms and accessory equipment. Proposed to have plant ready for operation at early date. Company operates plants in New Bedford, Mass., and at Hemp, N. C.

Celanese Corp. of America, Inc., New York, N. Y., has inquiries out for structural materials for initial units of new mill near Pearisburg, Va., where company has a 1200-acre tract of land, and will begin erection soon. Main units will consist of two three-story structures, 270 x 452 ft. A complete air-conditioning system will be installed. Entire project will represent an investment of about $10,000,000.

Concordia Silk Mills, Philadelphia, was sold by auction on Jan. 24. Equipment included 234 C & K silk looms, 24 Leesona quill winders, etc., and brought $27,600.

Kanter Silk Throwing Co., Port Allegheny, Pa.—Machinery and equipment at mill of this company has been purchased by the First National Bank, Port Allegheny, at a sheriff's sale. The plant closed permanently last November.

MILL NEWS

Kattermann & Mitchell Co., Scranton, Pa.—Mill of this company and that of the **Mutual Silk Throwing Co.,** associated interest, has been sold at a public auction.

Royal Weaving Co's., Pawtucket, R. I., No. 4 plant, has been purchased by the Industrial Paper & Cordage Co.

Royal Textiles, Inc., Walhalla, S. C., has been chartered to engage in the manufacture and sale of textiles, with capital stock of $1,000. Officers are J. R. Clark, president; Robert S. Thompson, vice-president, and V. S. Carter, secretary-treasurer.

South Hill (Va.) **Industries, Inc.,** will lease the new $30,000 ribbon mill being erected at South Hill. Officers of the corporation are J. C. Jessup, president; F. E. Watkins, vice-president, and Charles W. Crowder, secretary and treasurer.

Belding-Corticelli, Ltd., Montreal, Quebec, has plans for one-story addition to mill at Coaticook, Quebec, cost close to $50,000, with equipment.

Knitting Mill News

Shannon Hosiery Mills, Inc., Columbus, Ga., recently organized with capital of $1,000,000, as noted, have awarded contract to Potter & Shackelford, Inc., Greenville, S. C.

Griffin (Ga.) **Knitting Mills** have recently added machinery for manufacture of a popular-priced line of infants' vests, misses' union suits, etc.

J. C. Roulette & Sons, Inc., Hagerstown, Md., have been acquired by Elmer K. Eyerly, who plans to lease it to an underwear manufacturer. Purchase was made at recent public auction from RFC. Machinery was sold separately.

Manuel Lehn, Bridgeton, N. J., is organizing a mill to operate 12 24-section 42 gage ff. machines.

Leeds Silk Hosiery Mills, Inc., Clifton, N. J.—Machinery and equipment has been sold at a public liquidation sale to a number of purchasers.

John Bromley & Co., Riverside, N. J., has been installing several new 26-section 42-gage Reading leggers.

Gotham Silk Hosiery Co., New York, N. Y., has begun a modernization program at branch mill at Courtland and and Fifth Sts., Philadelphia, Pa., recently reopened after a shut-down of several months, and will install new long-section full-fashioned hosiery machines and auxiliary equipment.

Hinshaw Hosiery Mill, Balfour, N. C., has completed a modern mill to house its knitting and sewing rooms.

Nebel Knitting Co., Charlotte, N. C., will install 20 high-speed machines replacing 16 which have been transferred to the Jacksonville, Fla., plant of William Nebel.

Durham (N. C.) **Hosiery Mills Co.,** has placed an option in hands of Herbert McLean Purdy Co., New York, to sell its idle mill properties.

Holt Hosiery Mill, Inc., Graham, N. C., newly organized will operate in the old Scott-Mebane Mfg. Co. building. Three single-unit full-fashioned machines, costing $13,000 each, will be installed, along with a "heeler". Incorporators are G. M. Holt, J. A. Holt, Jr., and Walter Williamson, Jr., all of Burlington, N. C.

Duke Hosiery Mills, Inc., Hickory, N. C., with authorized capital of $50,000, has been organized to manufacture hosiery. Incorporators: Theodore R. Kramer, of Hickory; Chester H. Roth, of New York; and Sophia Moldauer, of Brooklyn.

Whisnant Hosiery Mills, Hickory, N. C., have begun erection of a two-story unit, 50 x 130 ft., and a one-story extension, 30 x 80 ft., the latter to be used for dye house. Equipment installation will double present capacity. New-style Komet machines for knitting English-ribbed hosiery for men, will be installed, along with additional spiral-type machines.

Adams-Millis Corp., High Point, N. C., and Kernersville, N. C., has purchased the old Kernersville Knitting Co. property.

Melrose Hosiery Mills, Inc., High Point, N. C., are installing additional full-fashioned machines in their new unit which contains 12 Reading machines.

Lillington, N. C., will have a new hosiery mill, to be housed in the Stewart Building. Names of operators have not been announced.

Blue Ridge Hosiery Mills, Marion, N. C., announce plans for doubling the plant's capacity. Thirty new knitting machines will be installed, along with nine loopers and two tables of boarders.

Elizabeth James Hosiery Mill, Marion, N. C., has purchased 10 new automatic knitting machines to knit men's anklets, crew sox, and slacks with elastic tops.

R. L. James & Son Hosiery Mills, Marion, N. C., will construct an addition to double

PARAMOUNT Dual Heat Hosiery Finishing Machine

CREATING Incomparable Quality in Hosiery Finishing and Establishing Production Figures that are truly amazing, the Paramount Dual Heat Machine will revolutionize and simplify your hosiery drying and finishing methods.

Compare this Machine with your present equipment. You will find that it requires less square feet of floor space per dozen than any existing method of finishing; less steam consumption — heating is direct; less power — a one-quarter horsepower motor operates the entire machine; less investment per dozen — reasonably priced; less upkeep — built to render years of service; and production possibilities with quality work that cannot be challenged.

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T.W.-39

MILL NEWS

present floor space. It will measure 100 x 150 ft.

Sidney Yount is constructing a building, 40 x 60 ft., on the Startown Highway, near Newton, N. C., in which he will operate a hosiery mill.

Alamac Hosiery Co., Reidsville, N. C., has been purchased by Jac Feinberg & Son, New York, which firm is already interested in three other hosiery mills in the South. Alamac has 24 42- and 45-gage ff. machines.

Wyatt Knitting Co., Sanford, N. C., recently organized by W. F. Wyatt and John A. Bailey, Burlington, N. C., has concluded arrangements with O. P. Makepeace and M. W. Harris, Sanford, for construction of one-story mill, 86 x 115 ft., on Goldsboro Ave.

Runnymede Mills, Inc., Tarboro, N. C., is installing 24 automatic knitting machines, costing about $1,500 each.

Largman, Gray Co., Croydon, Pa., have installed four new 28-section 42-gage leggers.

DuBarry Hosiery Mills, Hatboro, Pa., recently organized, have taken over local mill recently vacated by Oscar Nebel Co., Inc., and will begin operations at once.

Alice Peterson, Hatfield, Pa., has leased the Morton Shulman plant and will manufacture full-fashioned hosiery.

Vestal Mills, Inc., Athens, Tenn., is making repairs and improvements in former mill of Chilhowee Mills, recently taken over, and will manufacture men's silk hosiery.

Graysville (Tenn.) **Hosiery Mill** has moved to Dayton, Tenn., and is located in the former Sloan Building on Main Street.

Johnson City (Tenn.) **Mills** have installed eight 45-gage full-fashioned hosiery machines. This is in addition to their previous equipment of 235 circular machines on men's and children's goods.

Charles H. Bacon Co., Loudon, Tenn., has begun erection of one-story addition, 100x116 ft., with installation to include 16 hosiery machines and accessory equipment. This number will be increased to 25 machines at later date.

Se-Ling Hosiery Mills, Nashville, Tenn., are installing two new high-speed, fine-gage, single-unit knitting machines at a cost of $18,000 each. This will increase Se-Ling's annual production of full-fashioned hosiery by 10,000 doz. pr.

Vanette Hosiery Mills, Dallas, Texas, has started additions to cost $250,000 with new equipment for knitting and finishing. Increase in output will be 25%.

New Braunfels, Tex. — Under the direction of Christopher Shelby & Associates, Inc., San Antonio, plans are maturing for a new hosiery mill at New Braunfels, comprising several large units with boiler house. Cost reported in excess of $650,000.

Danville (Va.) **Knitting Mills** are adding two stories to part of the plant, 63x100 ft., the improvement to cost $24,000.

Processing Plant News

Marvelous Dyeing & Finishing Co., Derby, Conn., has awarded contract to Harold P. Wakelee, 126 Pearl St., Seymour, for 1-story concrete addition to the dyehouse, 55x60 ft.

American Ecla Corp., a European concern, has leased the G. Drouve Co.'s plant at 2082 Kings Highway, Fairfield, Conn., for five years for rubberizing plant.

Rock Hill (S. C.) Printing & Finishing Co. has taken bids for construction of one-story addition, 180x380 ft., on adjoining site, recently acquired, and will soon begin work. Cost over $100,000 with equipment. Lockwood Greene Engineers, Inc., Spartanburg, S. C., are architects and engineers.

Ahern Textile Print, Inc., Norwich, Conn., recently organized with capital of $100,000, plans operation of local dye and print works.

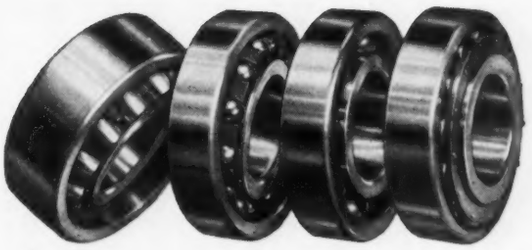
Falls Co., Norwich, Conn., has let contract to Archibald Torrance, Prospect St., Norwich, for alterations and improvements.

United States Finishing Co., Norwich, Conn., has let general contract to Archibald Torrance, Prospect St., Norwich, for alterations and repairs in group of seven mill units on North Main St.

Kapo Dyeing & Print Works, Haledon, N. J., is to continue in operation under a creditors' agreement.

Apex-Oriental Corp., Paterson, N. J., has closed its mill permanently and building, equipment and other property was offered for sale at auction on Jan. 26. Company is controlled by Duplan Silk Corp., New York, N. Y.

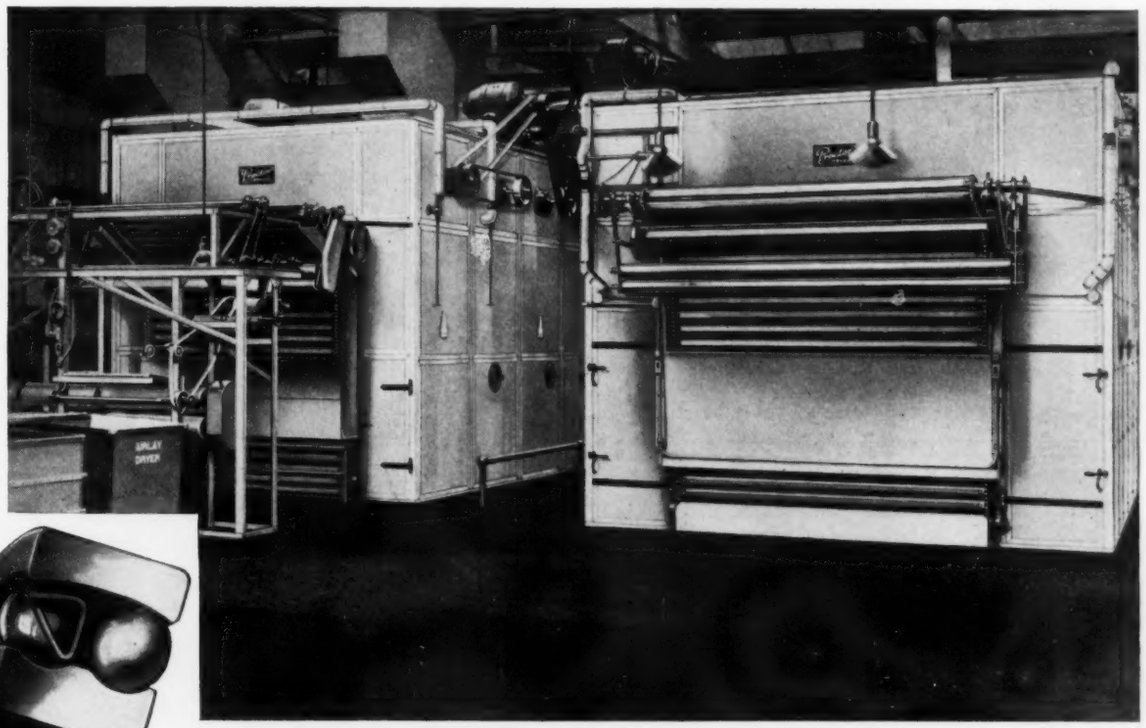
Hickory (N. C.) **Dyeing & Winding Co.,** recently formed with capital of $50,000, is securing property and will soon begin operations.



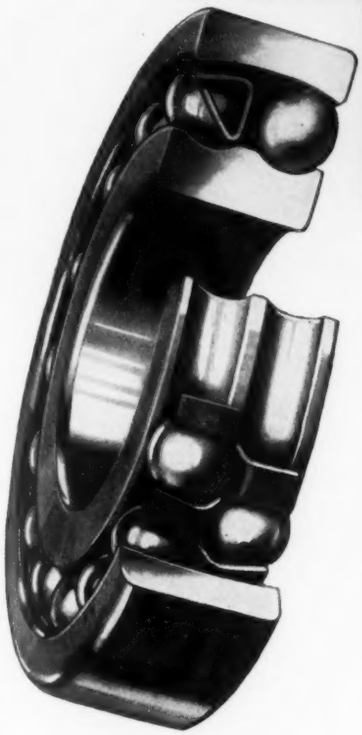
DRYING TEXTILES

WITHOUT ANY BEARING TROUBLE IS EASY

WITH SKF-EQUIPPED DRYERS



• *Built by Proctor & Schwartz, Inc.*



SKF BEARINGS ON EVERY ROTATING PART WORK SMOOTHLY THROUGHOUT A LONG LIFE IN HIGH TEMPERATURES

• Drying piece goods of rayon, silk, cotton, wool, worsted, hair cloth, linings and other materials *without tension* is easy for this Proctor Multipass Air-Lay Dryer. It has SKF Bearings not only on every rotating part, but on its Diehl motor as well.

The use of SKF is your warranty of smooth performance in high temperatures . . . minimum maintenance . . . and of bearings that have a long useful life. It's also your assurance of well-designed housings that protect the bearings from lubricant leakage and foreign matter.

When *you* install SKF you can be certain of reliability, long life, low power consumption, cleanliness and many other economies which have made SKF so successful in the textile industry. 4266

SKF

Ball and Roller Bearings

SKF INDUSTRIES, INC., FRONT ST. & ERIE AVE., PHILA., PA.

DENMAN LOOM PARTS

Mean Just One Thing:

Lowest Cost per Loom per Year

PICKERS, LUG STRAPS,
HOLDUPS, ETC.

The Terrell Machine Co., Inc.

Charlotte, North Carolina

PINKING

MACHINES FOR PRODUCTION OF SAMPLE BOOKS AND SWATCHES

Multiple layers of cloth pinked in a single cut. Thousands of perfectly pinked ravel-proof samples produced in amazingly short time by means of these hand-operated inexpensive machines. Increase your orders by making a neater presentation of your sample swatches. Write for further details.

CHANDLER MACHINE COMPANY
AYER, MASS.

Manufacturers of all types of pinking machines.

Water Purification Plants

Designed — Constructed — Guaranteed

By

HUNGERFORD & TERRY, Inc.

CLAYTON, NEW JERSEY

Also **INVERSAND** Zeolite Softeners, Chemical Feeders, De-Oiling Filters and **BASEX** and **HI-BASEX** Greensand Zeolites

FREE FOR THE ASKING

READERS interested in literature reviewed on this page may secure copies by writing to TEXTILE WORLD, 330 West 42d St., New York, giving their company connection.

Nylon. E. I. du Pont de Nemours & Co. Holiday, 1938, issue of *du Pont Magazine* contains two-page article announcing company's new product; includes photograph of site of new Nylon plant.

Chemicals. Glyco Products Co., Inc. New edition of "Chemicals By Glyco" describes products made by this company, including emulsifying agents, synthetic waxes, resins, etc.

Electrical Equipment. General Electric Co. Bulletin GEA-2872 describes, in 24 pages, "what every plant operator should know about metal-inclosed switchgear." Bulletin GEA-2964 announces a full-voltage magnetic motor starter manufactured by the company.

Sizing. Charles B. Johnson. December, 1938, issue of *Rayon Warp Sizing Specialist* contains article titled "Who Will Weave Spun Rayon?" as well as an installation photograph of company's new sizers.

Stainless Steel. Electro Metallurgical Co. January, 1939, issue of *Electromet Review* contains textile-mill photographs showing use of stainless steel for beam and package dyeing.

Laboratory Cabinets. Tenney Engineering, Inc. 4-page bulletin describes and pictures company's new insulated air-conditioned cabinets for laboratory and industrial-process use.

Condensate Purity Control. Leeds & Northup Co. Illustrated catalog describes instruments for determining condensate purity in steam plants, whether for power or process use; also describes recorders and alarms which can be used with the instruments.

Paint. American Asphalt Paint Co. Folder describes company's new primer, said to form an air-tight film over rusted metal and prevent further deterioration.

Photoelectric Control. United Cinephone Corp. Booklet titled "Marvels of the Electric Eye" describes and pictures uses to which such equipment can be put; included are several applicable to textile mills.

Capacitor Motors. Century Electric Co. Manual 21-121 describes installation, care, and adjustment of company's fractional horsepower capacitor single-phase motors.

Carding and Spinning Equipment. Saco-Lowell Shops. November, 1938, issue of *Saco-Lowell Bulletin* contains articles on cotton carding, roving frames, etc. Included are photographs and descriptions of installations of company's equipment here and abroad.

Neoprene. Rubber Chemicals Div., E. I. du Pont de Nemours & Co., Inc. December 1938, issue of the *Neoprene Notebook* contains article on aging cracks in proofed goods; also announcement of a new, practically odorless, type of Neoprene.

Mill Supplies. Steel Heddle Mfg. Co. Folder describes hard-chrome plating of metal mill supplies manufactured by this company, and tells advantages of this treatment.

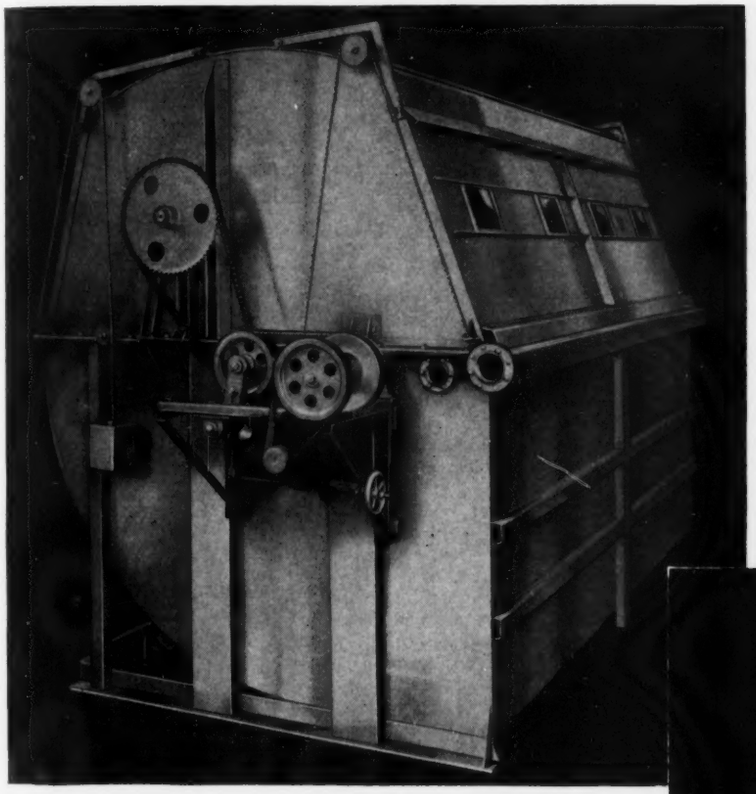
Yarn Dyeing. Franklin Process Co. Profusely illustrated pamphlet pictures and describes company's facilities for handling various types of yarn.

Air-Conditioning Equipment. Parks-Cramer Co. January, 1939, issue of *Parks' Parables* contains articles on "Certified Climate in Textile Mills," "Laboratory Air Conditioning," and "Automatic Traveling Cleaners."

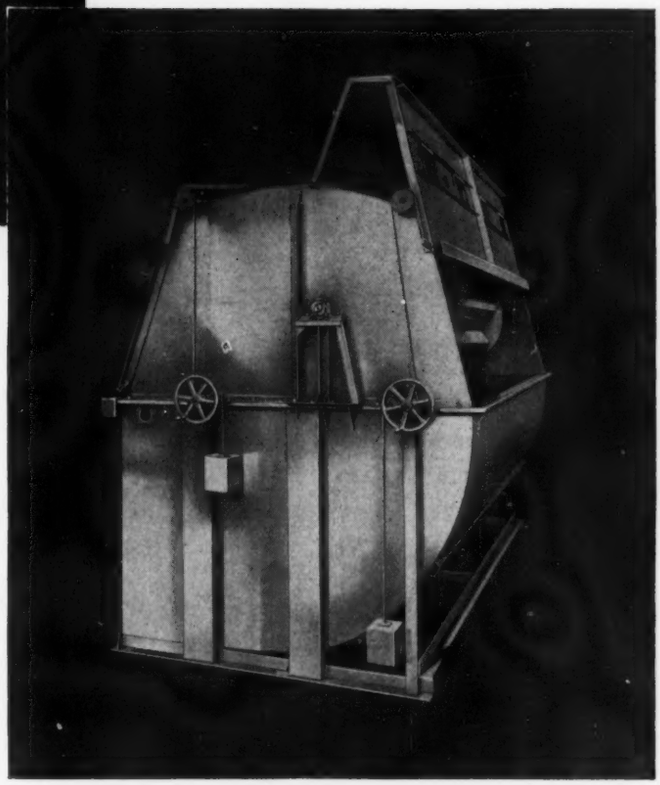
Electric Motors. Allis-Chalmers Mfg. Co. Illustrated bulletin, No. 1195, describes and pictures company's squirrel cage, low-maintenance, induction motors.

Conveyors. United Conveyor Corp. New catalog contains 24 pages of pictures and text describing company's pneumatic conveyors for handling fly ash, soot, dust, and coal siftings.

Knitting Machinery. Wildman Mfg. Co. Folder contains



HOW TO *Save money* IN THE PIECE DYEHOUSE



YOU can save steam, dye adds, labor, off-shades, etc., in the dyehouse by installing Hunter Totally Enclosed Piece Dye Kettles as illustrated.

Over $200,000.00 worth of these machines installed in two years offers proof of these distinct money savings.

The Kettles come complete with varispeed drive, enclosed bar or hump reels, lighted enclosures, complete and ready for operation. There is a size and type for any operation from sample dyeing to mass production, as well as for bleaching.

Any mill man interested in better and cheaper dyeing and bleaching is invited to mail the coupon, which will bring you complete details and a story of definite savings made in the wide variety of installations.

JAMES HUNTER MACHINE COMPANY

NORTH ADAMS, MASS.

Southern Agents: Carolina Specialty Co., Charlotte, N. C.
Western Representative: E. G. Paules, 343 Bendix Bldg., 1206 Maple St., Los Angeles, Cal.

JAMES HUNTER MACHINE CO., North Adams, Mass.
Please send Bulletin S D.

Name.....

Mill.....

Address.....

WHITMAN *Yarns*

MONOMAC SPINNING CO.
LAWRENCE, MASS.

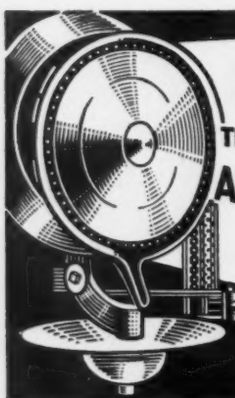
ARLINGTON MILLS
LAWRENCE, MASS.

NONQUITT MILLS
NEW BEDFORD, MASS.

CRAMERTON MILLS
CRAMERTON, N. C.

TALLAPOOSA MILLS
TALLAPOOSA, GA.

WILLIAM WHITMAN COMPANY, INC.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE



BAHNSON
THE MODERN SYSTEM OF
AIR CONDITIONING
Unsurpassed Economy!
BAHNSON CO., WINSTON-SALEM, N.C.

When You See This Slug—

See Also
Textile World
Year Book and Catalog

in an advertisement in any textile magazine it means that the manufacturer is referring you to an additional source of data concerning his products or services. He is inviting textile mill men to "look it up" first in the new edition of the

Textile World Yearbook and Catalog

FREE FOR THE ASKING

(Continued from page 92)

sample of fabric and picture of machine for knitting fine pile fabrics.

Adjustable Speed Control. Reeves Pulley Co. Folder describes three basic units manufactured by this company for meeting adjustable speed requirements over a wide range.

Throwing Equipment. Atwood Machine Co. January, 1939, issue of *Atwood Twists* contains articles describing installation of company's equipment at Sapona Cotton Mills, Inc. Included are several unusual photographs.

Stencilling Machinery. Diagraph-Bradley Stencil Machine Corp. 48-page catalog and reference book contains, in addition to descriptions of company's products, large amount of data on export shipping and shipments — metric conversion tables, translation of commonly used markings into foreign languages, Department of Commerce regulations, etc.

Toolroom Equipment. Lyon Metal Products, Inc. 8-page pamphlet, No. 105-D, describes company's racks, counters, cabinets, etc. for storing tools and supplies.

Organic Chemicals. Carbide & Carbon Chemicals Corp. Folder No. 10, titled "Amines," presents information on fourteen commercial amines used for emulsifying, neutralizing, saponifying, etc.

Deep Well Pumps Worthington Pump & Machinery Corp. Leaflet W-450-B19C pictures and describes company's type QE and QAE deep well, turbine pumps.

Floor Repairing. Stonhard Co. Leaflet describes company's products for repairing rutted floors; pictures show various types of damage, and steps in repairing it.

Control Instruments. Julien P. Friez & Sons. Several bulletins—No. 225 describes new line of hydraulic-action, solid liquid filled controls; No. TS covers heavy-capacity wall, oven, and industrial thermostats; No. LC on boiler, furnace, and fan control; No. TM describes compact, sensitive thermostats; No. CS covers stoker-control sets and accessories.

READERS interested in literature reviewed on this page may secure copies by writing to TEXTILE WORLD, 330 West 42d St., New York, giving their company connection.

Platform Trucks. Elwell-Parker Electric Co. Bulletins A-8416 and A-8459 picture and describe, respectively, low-lift and high-lift platform trucks manufactured by the company.

Humidity Table. Bahnson Co. Pocket-size table giving grains of moisture per cu. ft. at any temperature between 32° and 105° F. at 100% relative humidity; also indicates relative humidity at wet-bulb depression.

Mechanical Power Transmission. Ramsey Chain Co., Inc. Catalog No. 638 describes company's silent-chain drive and similar products; highlighted are the high speed of typical installations illustrated.

Corrosion Inhibitors. D. W. Haering & Co. Reprint of paper titled "Film Inhibitors in Industrial Aqueous Systems," which was presented at the fall meeting of the American Chemical Society.

Second-hand Equipment. Consolidated Products Co., Inc. Winter, 1939, issue of *Consolidated News* contains data on used power and process equipment offered by this company, including some textile equipment.

Suede. A. C. Lawrence Leather Co. Leaflet lists various classes of colors available in company's suede for garments, millinery and accessories; gives meaning of each color.

Travelers. Victor Ring Traveler Co. January, 1939, issue of *The Traveler* contains article on "Tracing the Causes of Unevenness in Yarns Produced on the Cotton System."

Floor Coloring. Master Builders Co. Illustrated folder describes company's Colormix-KuroKrome method for coloring concrete floors; included are data on short specifications and colors available.

Some One Has Said

To Collect the Living the World Owes You

Hustle for It

To Collect the Profit Your Mill Needs

Let X Family Looms Hustle for It

(They Are 20% Faster)

They Were Made to Hustle

They Do Hustle

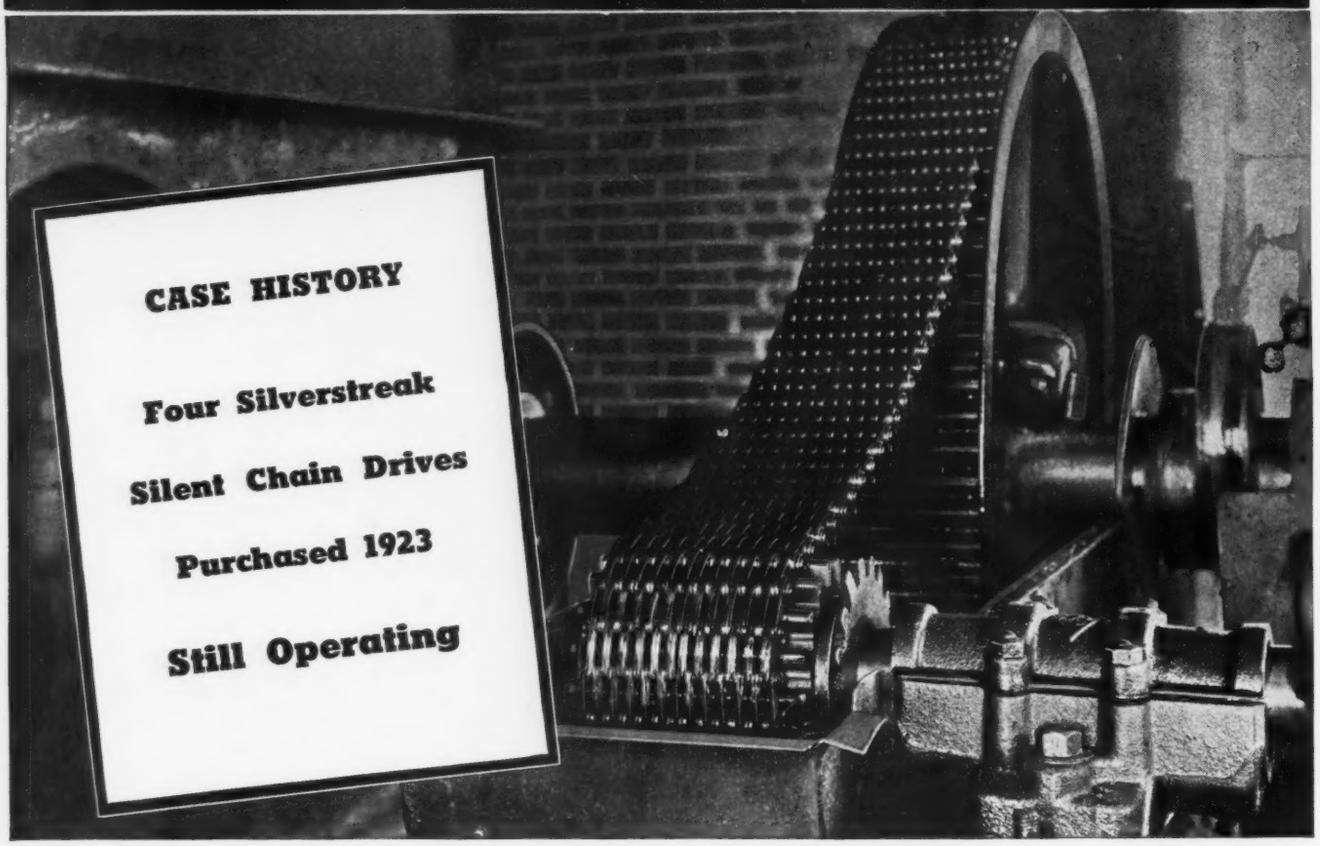
Give Them a Job

in Your Mill

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

SILENT CHAIN PERFORMANCE FACTS



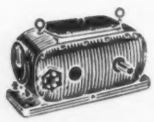
Trouble-free Operation 24 hrs. a day for 15 years .... with No Repair Expense

● Think of it! The equivalent of 58 years of service on a 40-hour week basis and still performing perfectly. And besides, during all these years, there have been no repairs—no maintenance expense or attention required except for periodic lubrication. That's the kind of performance that's made the Link-Belt Silent Chain Drive the "Champion" of all drives. Positive delivery of every R.P.M. — practically no attention or upkeep and outstanding economy are advantages this drive offers you. For complete information, send for our Engineering Data Book No. 125. Also for special books covering all or any of the complete line of Link-Belt positive drives illustrated below.

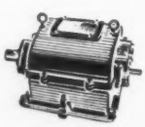
Link-Belt Company, Indianapolis, Chicago, Philadelphia, Atlanta, San Francisco, Toronto. Branch offices and distributors in principal cities.

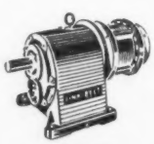
7490-C

ROLLER CHAIN DRIVE


P.I.V. GEAR SPEED VARIATOR

V.R.D. VARIABLE ROLLER DRIVE


HERRINGBONE GEAR REDUCER


MOTORIZED REDUCER

WORM GEAR REDUCER

1939
NEW YORK WORLD'S FAIR EXHIBITOR METALS BLDG.

LINK-BELT

SILVERSTREAK SILENT CHAIN DRIVES

ORTH LOOKING INTO...

Du Pont's NEW *Processes*

for PEROXIDE BLEACHING

You can step up bleaching efficiency — save money through these new processes. It won't cost you a cent to hear about them and how they are being profitably adapted by leading mills. Use the coupon below. One of our technical men will write or phone you for an appointment. No obligation of course.

DFF + SOLOZONE *
(Dustless, Free Flowing Sodium Peroxide)

ALBONE *
(Hydrogen Peroxide 100 Vol. Electrolytic)

SODIUM PERBORATE

+Trade Mark
***Reg. U. S. Pat. Off.**

DU PONT
REG. U.S. PAT. OFF.

The R. & H. Chemicals Department
E. I. DU PONT DE NEMOURS & CO., INC.
Wilmington, Delaware

District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

E. I. du Pont de Nemours & Co., Inc.
The R. & H. Chemicals Dept., Wilmington, Del.

Gentlemen:

I'd like to know about these new du Pont Bleaching Processes. Please have your representative phone or write me for an appointment.

Name_____

Company _____ Position _____

Address _____ City _____ State _____

ADVERTISING LOGIC

A Monthly Talk on Advertising for Textile World Readers

"Consensus of Opinion"

John Doe buys himself a cigar—a package of cigarettes—a tube of toothpaste—an extra tire—and so on—without bothering to ask Fred Jackson or Jim Jones whether his selection is wise, or otherwise—*But business buying is not quite so simple*—

JOHN DOE, of the Dwight Manufacturing Company—with plants in Maine—in Georgia—in Philadelphia—and in Virginia—finds that his opinion of machinery and equipment are compared with opinions of Fred Jackson—and Jim Jones—before buying decisions are made—finds in fact that often his opinions and desires are over-ridden in favor of opinions and desires of others—finds often that his ideas are based on past performances — past experiences — while Fred Jackson is voting for something which has come into the business picture lately, something which will do a better job of work.

Plant purchases these days—in organization after organization—represent, in other words, "consensus of opinion" purchases.

And the key men in plant Number One—often determine the equipment to be purchased for plant Number Two—the men in several plants who keep up-to-the-minute in what's happening in the equipment end of the industry often determine what the organization as a whole will adopt as equipment for all plants in an organization.

And so key men who aim to grow—and keep on growing—like to be on that part of consensus of opinion buying which represents the recommending end of the buying, rather than the accepting end—

Like to know, in other words, that they represent the live part of the thinking for their company—the part which is alive to every item of equipment or material—to every method—which will help the organization—in one plant as well as in another—to adopt the *modus operandi* which will assure best results—best product—best chance for profit.

And so, likewise, these key men, like key men in every industry, KNOW, that one of the best ways to make sure of keeping abreast of what manufacturers are doing for mills is to study the advertising pages of their business publication—from first page to last—

Because these advertising pages represent, month in and month out, the manufacturers' monthly report to key men of the industry on what it is they have to offer mills in the way of equipment and methods to help them in their efforts to secure the results they are after.

THE man on whom rests the full responsibility of buying *intelligently* for a mill finds Textile World advertising-reading as essential a part of his monthly duties as Textile World editorial-reading—

This is equally true of the men who make up the deciding majority in "consensus of opinion" buying.

And that goes whether "consensus of opinion" buying rests in the hands of men all in one spot—or men in different plants in different parts of the country.

For Textile World advertising offers equal opportunity at one and the same time, to men in New England, in the South, in all Textile States of the Union, to become acquainted with what manufacturers in all parts of the country have to offer.

Textile World advertising pages make it possible for us—to practically make sure that, when it comes to "consensus of opinion" buying, we will never be found on the minority side—among those who must plead guilty to not knowing about the methods which suppliers are currently making available to the mills of the country.

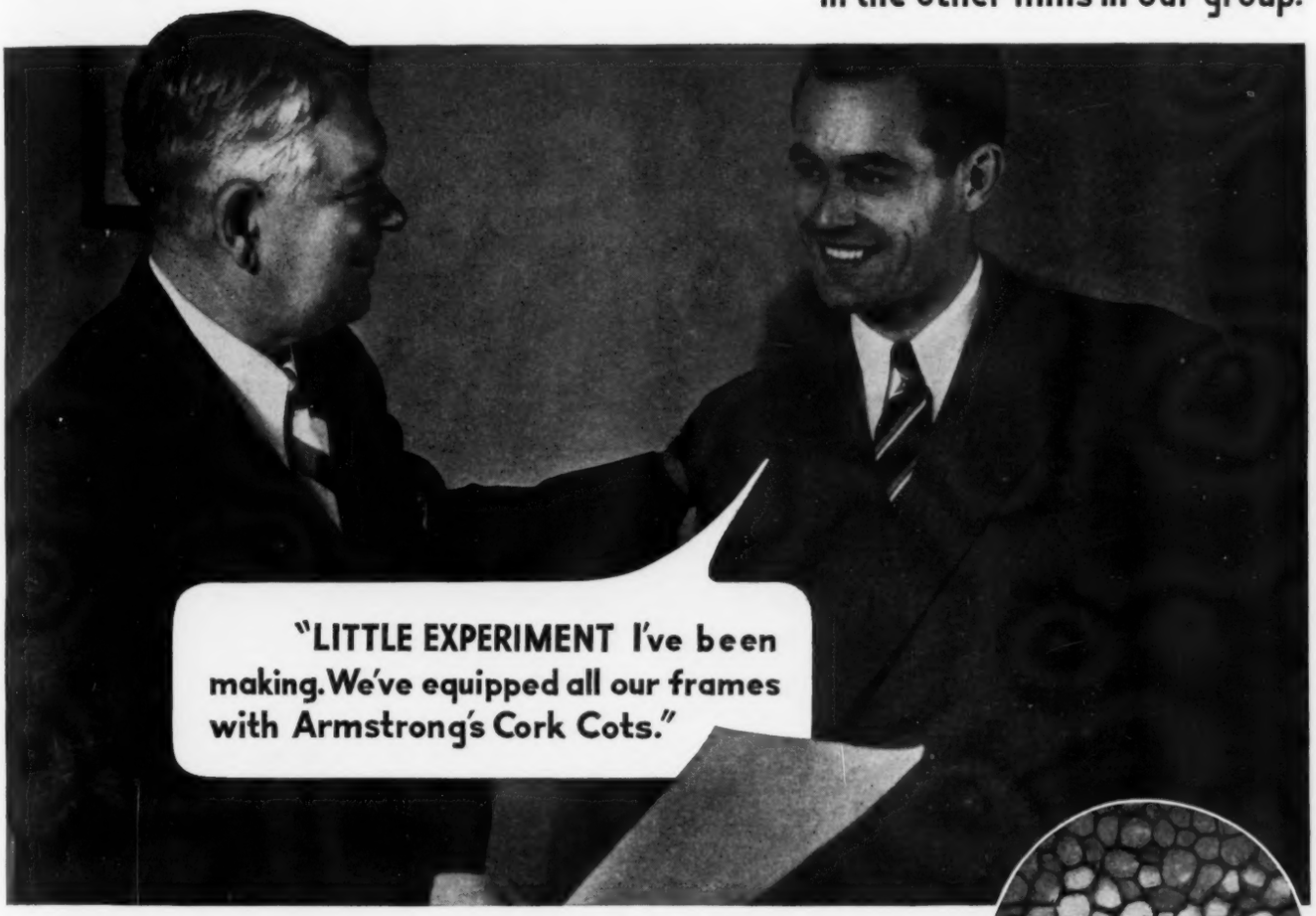
Advertising-reading puts us in close contact with industry's *center of activity*, regardless of *our* location, regardless of *our* duties—helps make sure that "consensus of opinion" buying will correspond with "our opinion" buying.

Thus the habit of ad-reading is a profitable habit—

Is it one of your habits?

"WHAT'S THE SECRET, JIM?

These figures show that your roll covering expense in the No. 4 mill is only half what it is in the other mills in our group."



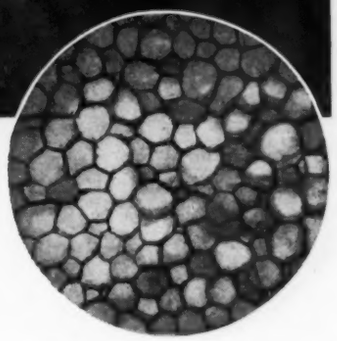
"OUR ROLL COVERING costs have been high as you know—too high to my way of thinking. So nine months ago, as an experiment, I began equipping the spinning and cardroom frames in our No. 4 mill with Armstrong's Cork Cots.

"RESULTS? You told me the answer yourself. It not only is reducing roll costs, but is giving us a stronger and more uniform product as well. We're getting better running work, too. Fewer top roll laps. Less end breakage. And these cots practically eliminate eyebrows.

"COSTS? Just glance at those figures again! The first cost of Armstrong's Cork Cots is no more than other roll coverings. But look at the savings they give us by lasting so much longer. Those cots will be good for a couple of years more because they can be rebuffed three or four times for about half a cent a roll."

"NO QUESTION about it, Jim. Your experiment proves to me that a complete change-over to cork will cut our roll covering cost by 50% or more. After what you've shown me, there's no reason to hesitate—I'm going to suggest we change all our mills to Armstrong's Cork right now."

RIGHT NOW is a good time to find out how *your* mill can benefit by a change-over to the modern roll covering—Armstrong's Seamless Cork Cots. Let an Armstrong representative show you production figures of mills spinning your range of numbers on cork. Or write today to Armstrong Cork Company, Industrial Division, Textile Products Section, 927 Arch Street, Lancaster, Pennsylvania.



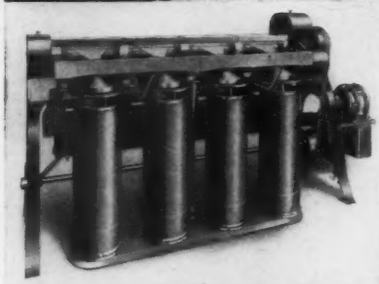
WHY CORK COTS HAVE LONGER LIFE

The microscope shows that cork consists of millions of tiny cells of trapped air. Under pressure, this air contracts, but the cell walls do not change. When pressure is released, the cork "comes back" quickly to its original shape. That's why cork cots last longer, give you a truer, more uniform drafting surface over a longer period of time.

ARMSTRONG'S *Extra Cushion* SEAMLESS CORK COTS

CORK PRODUCTS SINCE 1860

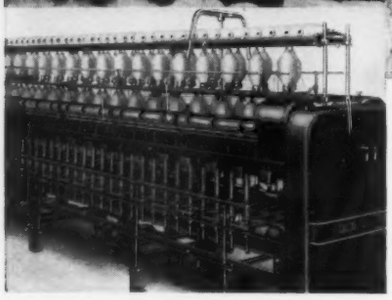
A Good Beginning and a good *ending*



DRAWING SLIVER

TO SPINNING BOBBIN

IN 3 OPERATIONS



Photograph of Controlled Draft Drawing Sliver enlarged about 8 times.

Unified Fibre Control

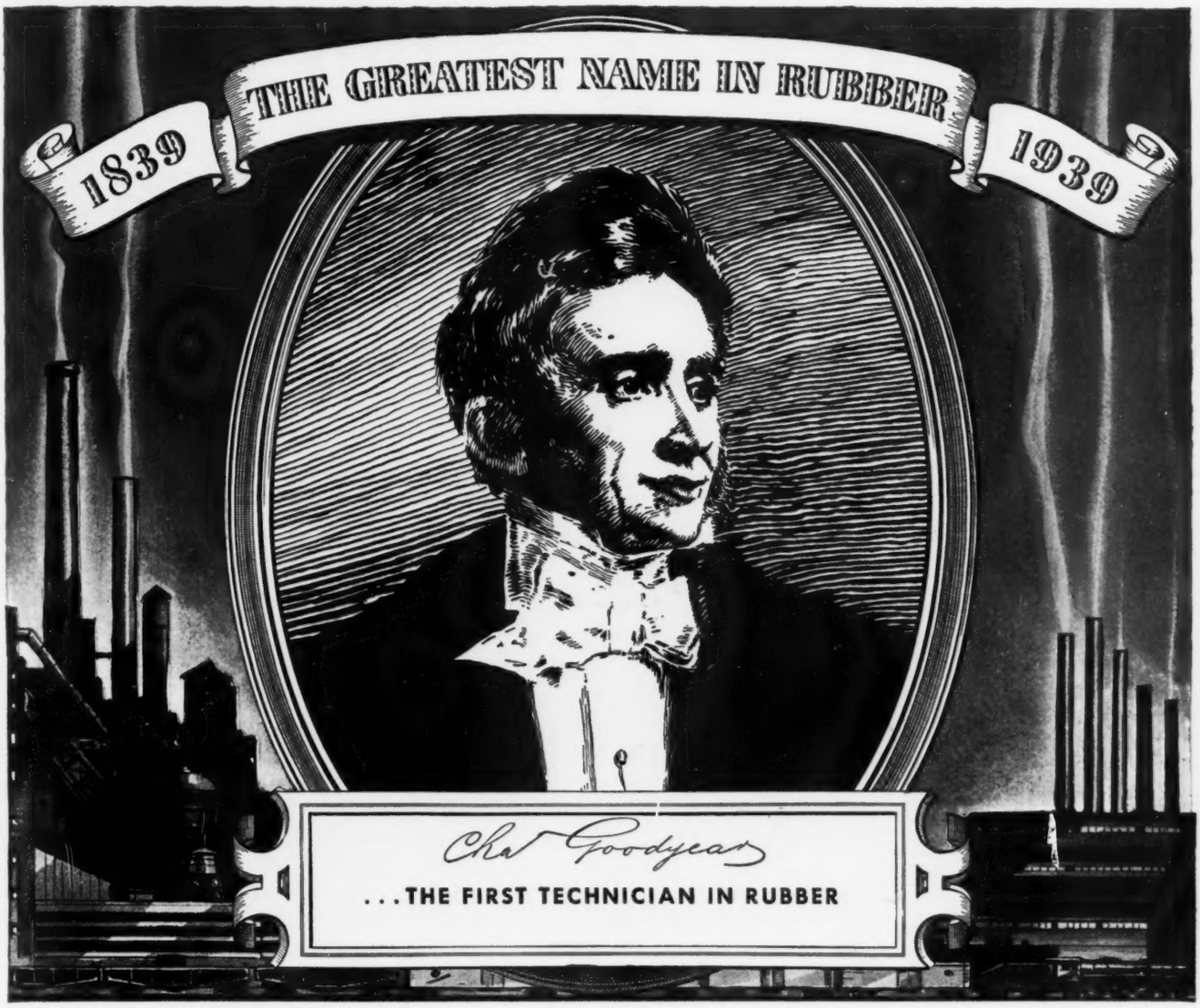
Assures Better Yarn at Every Drafting Operation

The "long pull" from drawing sliver to spinning bobbin used to require 5 operations. But today progressive mills using Saco-Lowell Controlled Draft Roving with Unified Fibre Control do it in 3. And these three operations are not only shorter, quicker, and more efficient, but actually produce a better, more uniform and stronger yarn. The yarn is better and stronger because with fewer operations and less equipment there is, consequently, less manipulation of the fibre . . . and with Unified Fibre Control, drawing, roving and spinning now produce more uniform strands. For at each step the fibres are under effective control and drafted with a minimum of breakage. ¶ We would like to give you all the facts about Unified Fibre Control and show you what this improved method means to you in terms of greater savings and increased profits. Write today.

SACO-LOWELL SHOPS

60 Batterymarch Street, Boston, Mass.

Charlotte, N. C. . Greenville, S. C. . Atlanta, Ga.



"Notwithstanding all the difficulties he encountered, he went on. If there was reproach, he bore it. If poverty, he suffered under it. But he went on, and people then saw, when his invention was completed, that what they had been treating with ridicule, was sublime; that what they had made the subject of reproach, was the exercise of great inventive genius; that what they had laughed at, the perseverance of a man of talent with great perceptive faculties, with indomitable perseverance and intellect, had brought out as much to their astonishment, as if another sun had risen in the hemisphere above...

"I believe that the man who sits at this table. Charles Goodyear, is to go down to posterity in the history of the arts in this country, in that great class of inventors, at the head of which stands Robert Fulton... in which class stand the names of Whitney, and of Morris, and in which class will stand 'non post longo intervallo' the humble name of Charles Goodyear."

From the address of DANIEL WEBSTER *before the U. S. Circuit Court, District of New Jersey, in 1852.*

HE DISCOVERED *the process of vulcanization that gave us rubber as we know it today.*

He was first to conceive rubber's wide application in meeting industry's many problems.

He built the first practical rubber belting and demonstrated its efficiency over other kinds.

He fashioned from rubber the first successful hose for handling air, steam, oil, acids and other solvents.

He shaped the first enduring rubber molded goods; contrived from rubber the first dependable packing for steam engines.

In all he either manufactured, patented or envisioned more than one thousand different applications of rubber before his death 79 years ago.

His name was Charles Goodyear. He was the first technician in rubber.

◆ ◆ ◆

● This year marks the One Hundredth Anniversary of Charles Goodyear's discovery of vulcanization. In recognition not alone of his great contribution to the world but also of the self-sacrifice, the faith and courage of the man, this tribute is published by an enterprise founded long after his death — a business that, inspired by his example, seeks by serviceability to deserve his name. Dedicated to that service today is the G.T.M.—Goodyear Technical Man—who in countless new industries of which Charles Goodyear never dreamed carries on his work of multiplying rubber's usefulness through specialized application to industrial needs.

THE GOODYEAR TIRE & RUBBER COMPANY
AKRON, OHIO

"The flooring in our plant is of *Northern Hard Maple* *such as is sold by the* MFMA*"

says C. W. GADDY, Supt. and Mgr., Knitting Department, Wiscassett Mills Company

"22 years old and as good as new"..."Stays easier to clean and keeps free from lint"..."Lowers maintenance"..."The wear is negligible"—these are facts familiar to mill experience with Northern Hard Maple floors.

But modern operators also know *these* facts: Not all Maple is *Northern Hard* Maple. Only this remarkably *tough-fibred, tight-grained* Maple offers this outstanding performance. It pays to make sure of *Northern Hard* Maple flooring. The simple way to do this is to specify MFMA* Maple. This trademark guarantees that this flooring is *Northern Hard* Maple, conforming to the grade specified, as established by the Association. Specify MFMA, and you protect your flooring investment.

MAPLE FLOORING MANUFACTURERS ASSOCIATION

1793 McCormick Building, Chicago, Illinois

See our catalog data in Sweet's, Sec. 11/77. Write for photographic folder on Northern Hard Maple and leaflet on heavy-duty finishes for old or new floors.

KNITTING DEPARTMENT
WISCASSETT MILLS COMPANY
FULL FASHIONED
AND
SEAMLESS HOSIERY
SELLING AGENTS
CANNON MILLS, Inc
70 NORTH ST., N. Y.

ALBEMARLE, N. C.,
Aug. 29, 1938

Textile World Publications
Business Department
330 West 42nd St.,
New York City, N. Y.

Gentlemen:-

We use maple flooring exclusively on all of our factory floors, even in concrete buildings, laying maple over sub-floor and tar concrete, which we feel adds appreciably to the comfort of the employees, and makes maintenance of machinery much less, and makes it much easier to have clean, sanitary looking floors as compared to concrete floors.

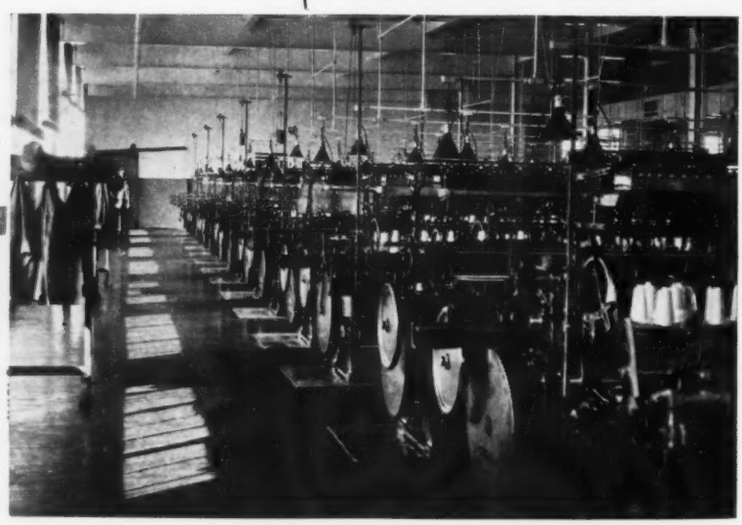
Our system of maintaining maple floors differs from the wet scouring system, in that we impregnate freshly laid floors with a high grade floor oil made up of paraffin and pine oils, and after that clean about once a week by dry brushing with power driven brush rather than by wet scouring. This treatment gives the floors a dry polish and uniform clean appearance, and the wear is absolutely negligible.

The floor shown in the picture to which you refer is now more than 22 years old, and to all appearances, and in fact in reality, just as sound and serviceable as it was the day the floor was laid. This is a general condition throughout our plant, representing many thousands of feet of flooring.

Yours very truly,

KNITTING DEPARTMENT
Wiscassett Mills Co.

C. W. GADDY.



22 year old MFMA *Hard Maple floor in the Full Fashioned knitting room, Wiscassett Mill Company, Albemarle, N. C., described in letter shown.*

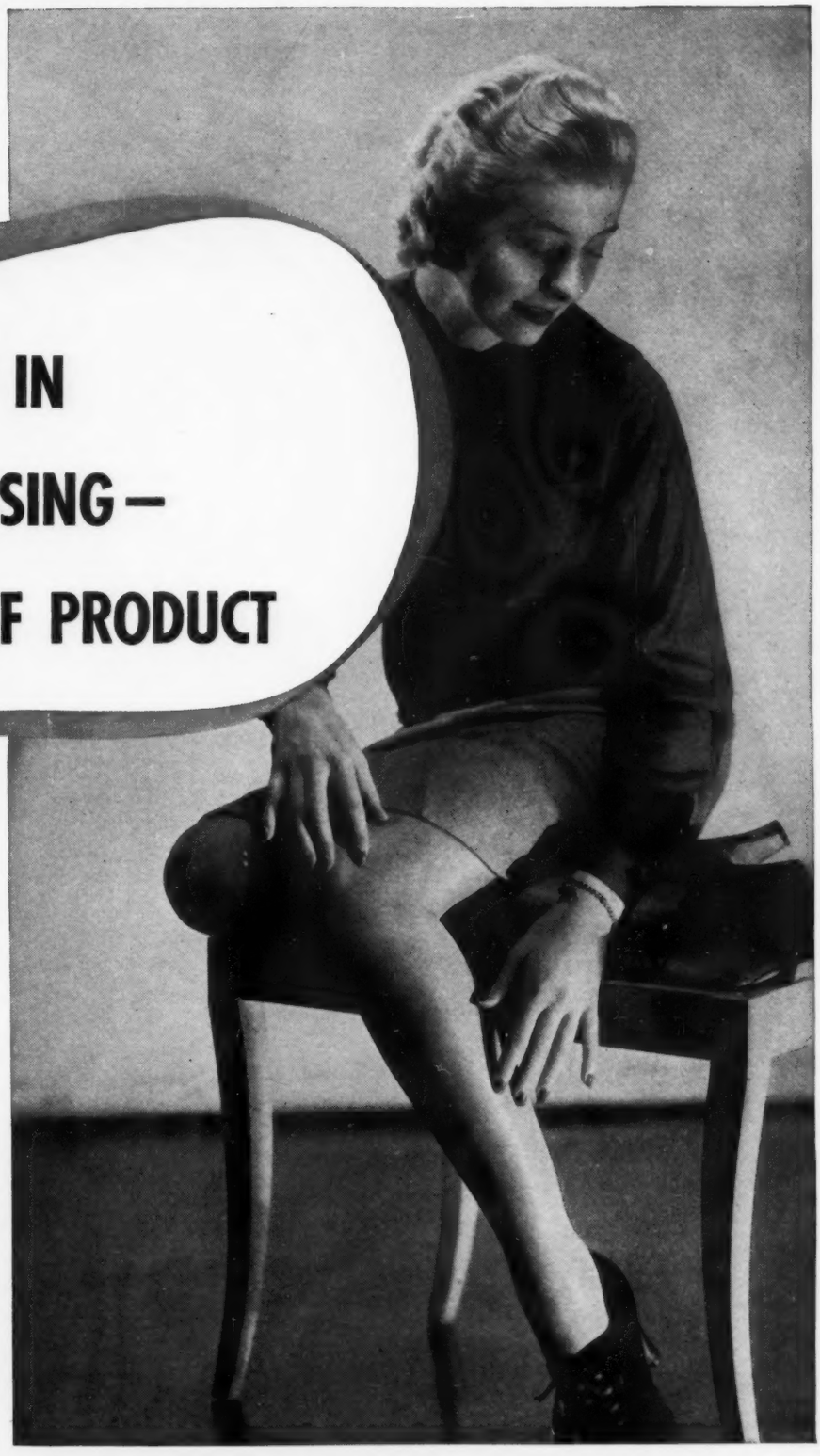
*The MFMA trademark, indented and stamped on Maple flooring, guarantees it to be all Northern Hard Maple, graded in accordance with the Association's exacting grade standards.

Floor *with* MFMA Maple

(REG. U. S. PAT. OFF.)

(NORTHERN HARD)

FOR EVERY STEP IN HOSIERY PROCESSING— A JACQUES WOLF PRODUCT



• For soaking yarns, WOLF SILK OIL F gives a soft, hygroscopic yarn.

For penetration, MONOPOLE OIL is especially adjusted to use with hard water. WETSIT, our new synthetic compound, gives instantaneous wetting out and excellent penetration.

Our customers report excellent results with BOIL-OFF POWDER W-1251... a recent addition to our line of liquid BOIL-OFF OILS.

For delustring, our DULL FINISH W-716A is recommended for dark shades; and DULL FINISH W-567B for light colors. Neither will stiffen nor dust off.

For splashproofing, our W-559... in a single bath... makes all fibres water shedding or water repellent.

A product for any type of finish is available. Our latest development is HOSIERY FINISH W-895M which gives a firm hand and delustres as well. Why not obtain both results in one operation?

Write today for samples and prices.

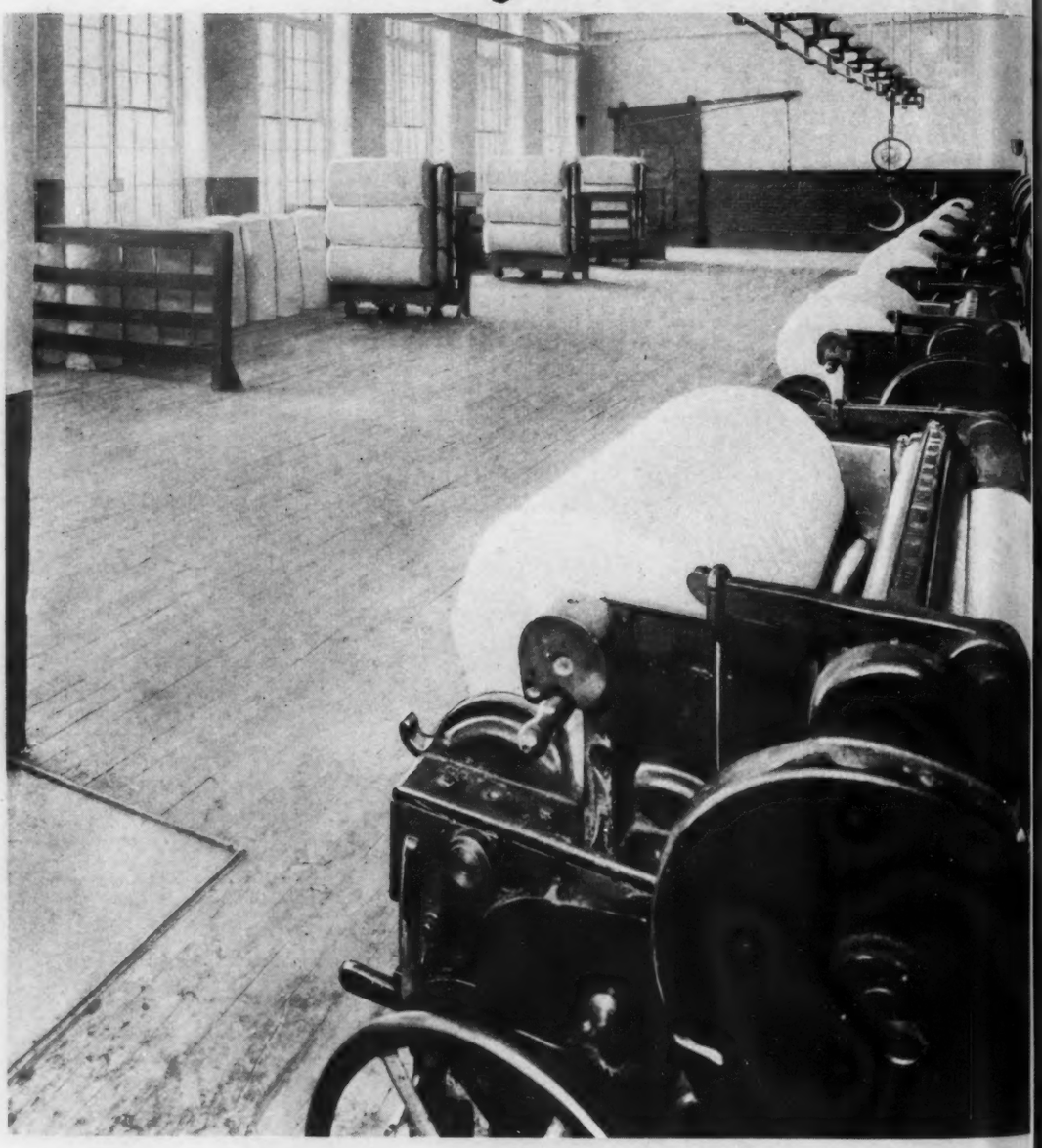
WOLF BRAND PRODUCTS

JACQUES WOLF & CO.

Chemicals PASSAIC, N. J.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn.
Midwestern Distributor: Bradley F. Marthens, Milwaukee, Wisc.

5 Big Mills Say *Texspray*



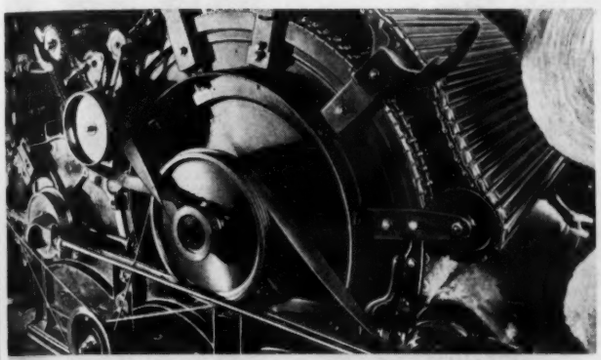
ROW OF ONE-PROCESS PICKERS in mill using the Texaco Texspray System of Cotton Conditioning. This mill reports outstanding improvement in working conditions due to reduction of fly.

TEXACO
REG. T. M.

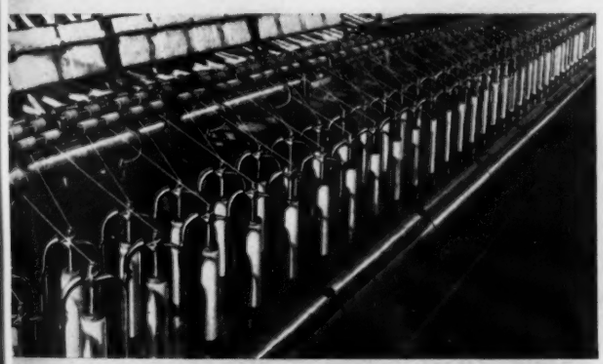
TEXACO TEXSPRAY

Conditioning

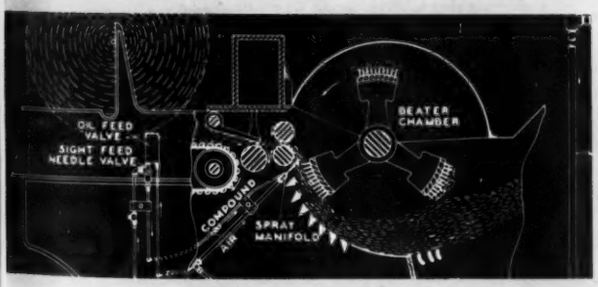
PAYS



SLUBBING, carding and drafting machines *stay clean*, process stock better, when stock has been Texspray conditioned.



MACHINE CONDITIONS are *vastly improved once the Texspray System is installed* . . . Cleaner machines, absence of fly, are noticeable.



TEXSPRAY COMPOUND is applied to the stock as it enters the beater chamber of the picker. Here only clean stock is sprayed. All leaves, hulls, and trash have been removed.

THEY'VE HAD 5 YEARS' EXPERIENCE in each of these five big southern mills. And today, the superintendents and management are unanimous. *Texspray conditioning pays.*

Texspray pays in the practical elimination of fly and dust, healthier working conditions, better carding and drawing, easier processing throughout the mill.

The first step in getting these improved results is to get in touch with Texaco. Call your nearest Texaco warehouse. Only when your mill is located in a cotton manufacturing area of the U. S., is Texaco Texspray System of conditioning available. A Texaco engineer will be glad to call and explain it fully, entirely without obligation.

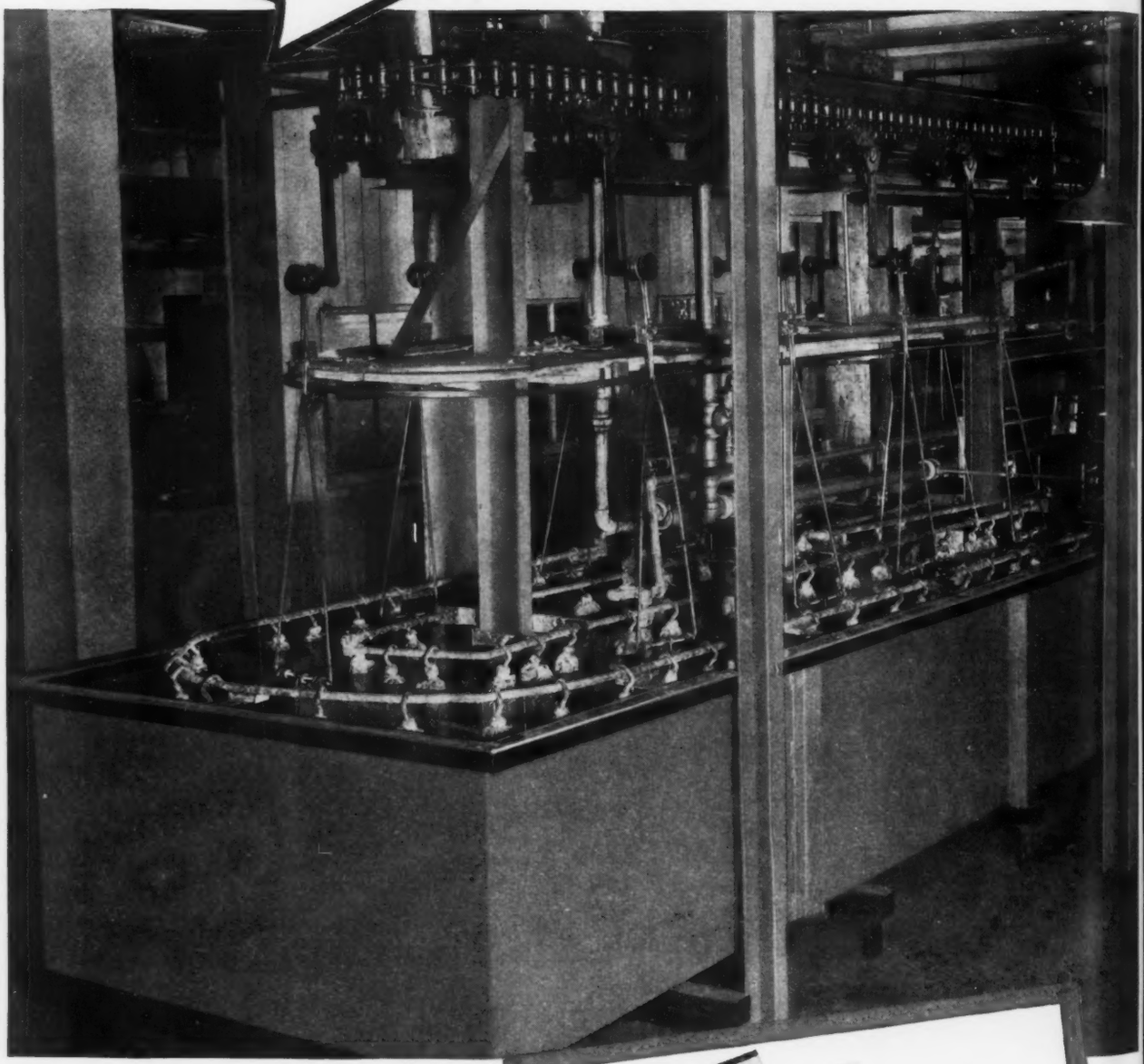
The Texas Company, 135 East 42nd Street, New York City.

Texaco Dealers invite you to tune in The Texaco Star Theatre—a full hour of all-star entertainment—Every Wednesday Night—Columbia Network—9:00 E.S.T., 8:00 C.S.T., 7:00 M.S.T., 6:00 P.S.T.

Y SYSTEM **OF COTTON CONDITIONING**

● Would you be interested in preventing corrosion and contamination of equipment?

Here's where ACE RUB



How to Avoid Failures

Ace rubber lined steel tanks for automatic plating of bright nickel by Seymour process. Installed at Fitzgerald Mfg. Company, Winsted, Conn. plant.

Catalogue

60 pages of information and illustrations. Sent on request. Write American Hard Rubber Company, 11 Mercer Street, New York, N.Y.

BER PROTECTION

does just that!

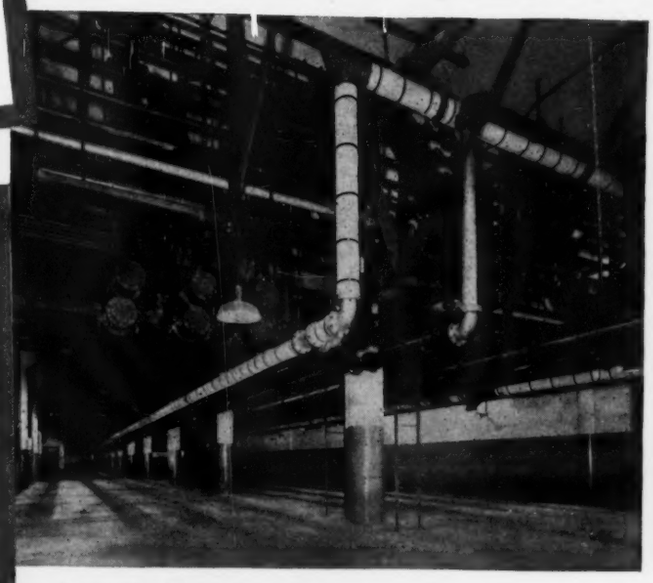
Performance records of thousands of installations of Ace hard rubber and Ace rubber lined equipment prove how Ace Protection prevents corrosion and contamination.

Discover how much you can save in *your* plant... in avoiding repairs and replacements ... in reducing costs.

Write American Hard Rubber Company, 11 Mercer Street, New York, N.Y., Akron, Ohio ... 111 W. Washington Street, Chicago, Illinois.

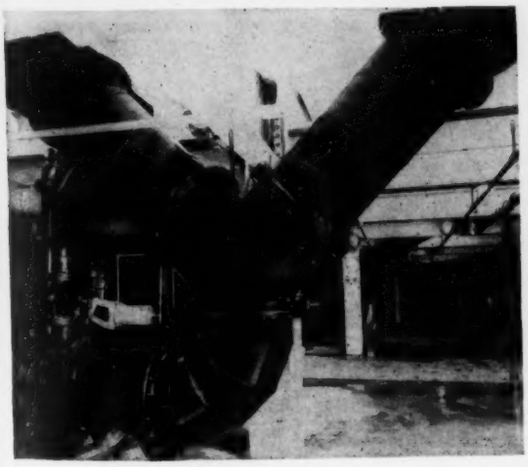
An Important Part

In modern sewage disposal and water purification systems are Ace rubber lined pipe and fittings. Installation Coney Island Disposal Plant, Sheepshead Bay, New York.



Good Engineering

... plus **ACE HARD RUBBER EQUIPMENT.** The above installation includes over 12 miles of solid Ace hard rubber Pipe in a Rayon Manufacturing plant, in sizes 1½ to 8 inches. Keeps processing solutions free of any form of contamination in the distribution and return lines.



Think of It!

Ace rubber lined pipe in 12, 14, 16, 18 and 24 inch sizes handles stock to beaters and Jordans at Lock Haven Mill of New York & Pennsylvania Company.

They'll *Stand By You* on any Textile Processing Job

WHETHER you're interested in the processing or finishing of textiles made from natural or man-made fibers, Procter & Gamble textile soaps will help you to turn out a finished product that meets both **your** approval and the approval of your customers. A finished product with that factor most important of all from the standpoint of profit—**saleability.**

Manufacturing and research facilities second to none in the soap industry give you this assurance. For through these extensive facilities the uniform quality, the safety, and the economy of Procter & Gamble soaps are made possible.

You'll find these quality textile soaps always in step with your ever-changing processing needs. You'll find them sound investments in economical processing and finishing.

Procter & Gamble · Cincinnati, Ohio

Olate A pure, neutral soap of exceptionally low titer. Unusually safe and effective for all textile processing.

OLIVE FLAKES
A neutral soap made from highest quality olive foots.

OLIVE Solid and bar. Neutral—made only from 100% olive foots.

IVORY Chips or powder. A high grade, medium titer soap, made of stable oils. Excellent for bleaching and high grade finishing.

PALM FLAKES
A pure palm oil soap for woolen and worsted fulling and scouring.

AMBER FLAKES
A quality high titer tallow soap.

GARDINOL

MODINAL Two chemically neutral processing agents.

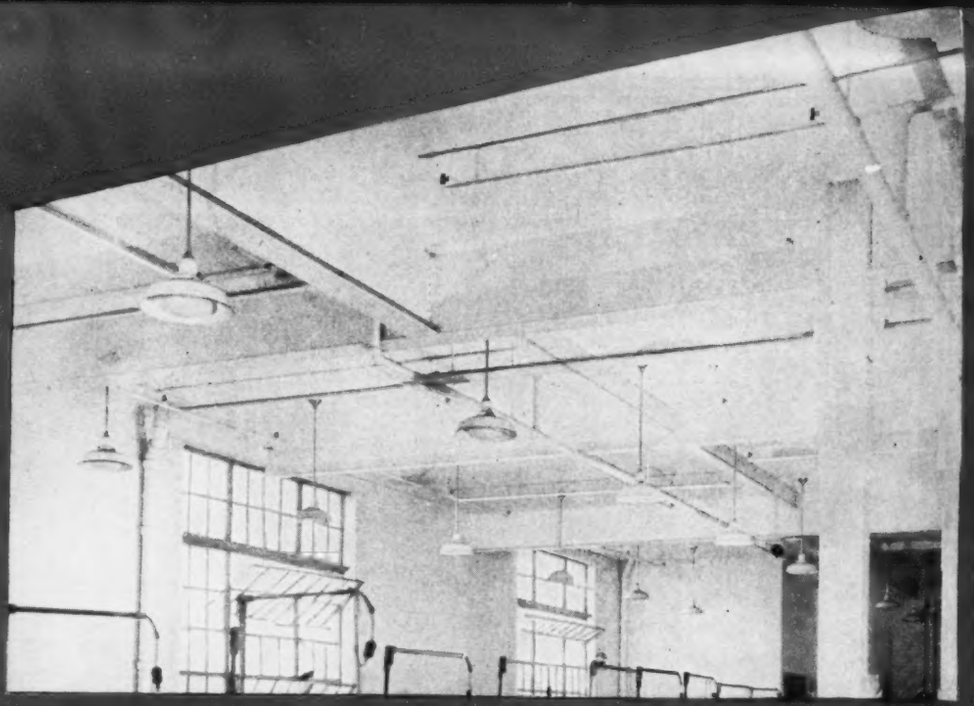
GARDINOL—for operations in which wetting action and penetrating are of prime importance.

MODINAL—for operations when detergency is of prime importance.

To meet special requirements, these products are made in a variety of types and forms.

There is a Time-Tested PROCTER & GAMBLE soap for EVERY Textile Processing Need

Look at your CEILINGS and WALLS!



Are they playing their part in your Plant's Light Conditioning?

You "light condition" to save money... to speed up work, heighten morale, cut down errors, lower production costs. But is your plant truly, economically light conditioned? It can't be if your ceilings and walls are dull and dingy ... unpainted absorbers of light!

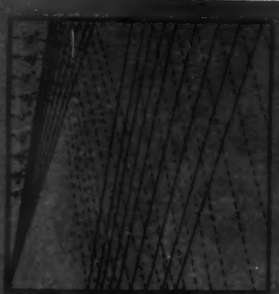
To make the most of both free daylight and the artificial light you pay for—your first step in light conditioning your plant is white paint. To get the most in highest light reflection, longest-lasting whiteness under the most "difficult" paint conditions in your plant—the white paint you need is Sherwin-Williams Save-Lite!

There's a Save-Lite specially formulated for your plant and the conditions under which it operates. The Sherwin-Williams painting technician will tell you exactly which Save-Lite you need and where in your plant you need it. Let him make a survey. There will be no obligation. Or write for the free Sherwin-Williams "Plant Conditioning Report". Address the Sherwin-Williams Company, Cleveland, Ohio, and all principal cities.

SEE THE SHERWIN-WILLIAMS PAINTING TECHNICIAN

SHERWIN-WILLIAMS SAVE-LITE THE PLANT CONDITIONING PAINT

WOUND ON FOSTER MODEL 102



WINDING FLEXIBILITY
9 DIFFERENT ANGLES
FROM 9° TO 18°

ONE REASON WHY FOSTER CONES ARE STANDARD FOR COTTON, WORSTED AND MERINO YARNS

Cones can be wound as soft as desired on the Foster Model 102, and in this condition will deliver from the knitting machine with uniform tension, thus reducing defects in the knitted fabric.

Another important advantage of this machine is that it will wind twice as much yarn with 1/3 less labor, as compared with older models.

Last but not least, don't forget its FLEXIBILITY: — 9 different winding angles from 9 to 18 degrees, simply by changing four small gears in the head of the machine.

Whether your problem is the winding of cotton, worsted, merino, silk, or rayon yarns, we will be glad to study it, free of all obligations, and make recommendations.

FOSTER MACHINE COMPANY
WESTFIELD, MASS.

FOSTER MODEL 102

9 REASONS WHY MANUFACTURERS OF NATIONALLY KNOWN TEXTILE PRODUCTS USE Franklin Process DYEING

1. This dyeing service is readily available in every major textile area in the United States.

2. Franklin Process offers a wide range of standard shades (see color cards) and has unequalled laboratory facilities for developing special shades.

3. The Franklin Process of package dyeing effects more thorough and more uniform penetration, resulting in brighter and more permanent colors.

4. Franklin Process has specialized in fast color work for 25 years.

5. Franklin Process has the largest custom yarn dyeing capacity in the world. Its four plants have hundreds of dyeing machines in 22 different sizes from 1 lb. to 2500 lbs. in capacity. The 2500 lb. machines make available to customers large quantities of yarn of exactly the same shade for fabrics having solid color warp, filling or pile.

6. Franklin Process maintains large stocks of cotton yarns to facilitate delivery to customers who wish the dyer to supply the yarn, thus centralizing responsibility.

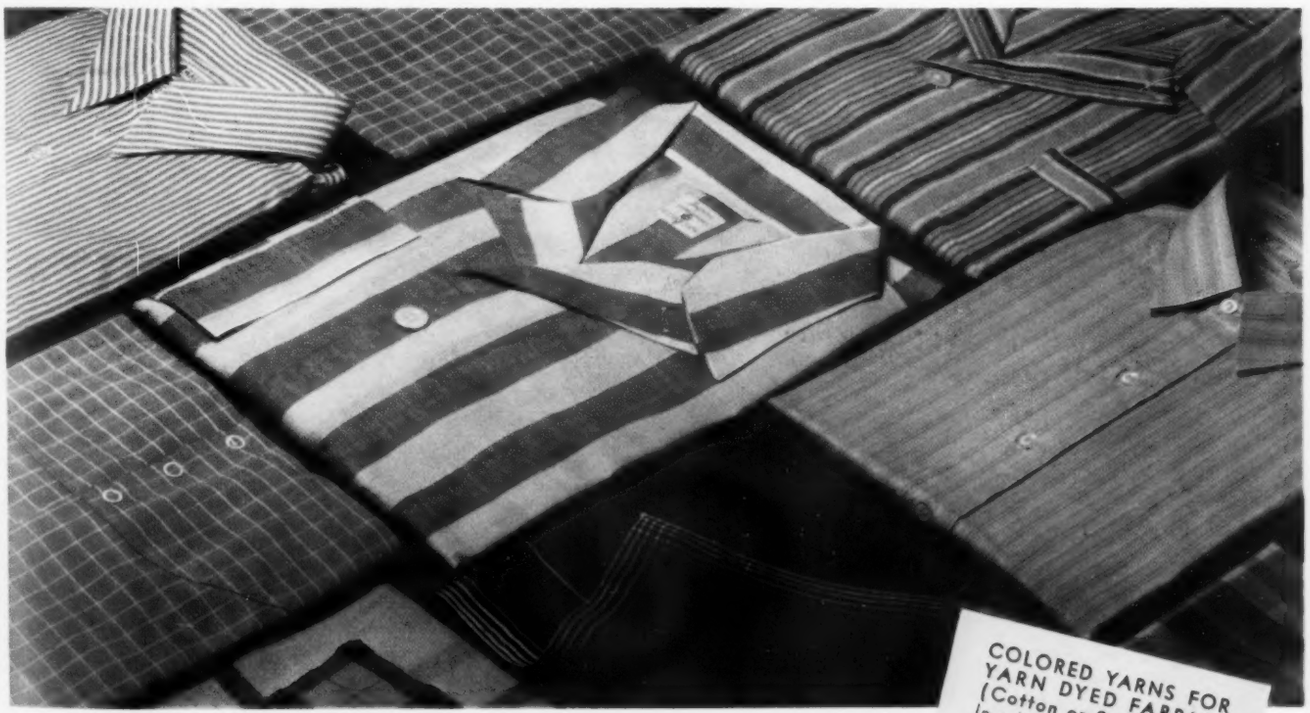
7. Franklin Process has winding and yarn converting equipment which is adequate for emergency as well as normal requirements.

8. Mills prefer the Franklin Package, which, with its firm wind and square corners, makes an economical supply (rotating or overend delivery) for future operations.

9. Franklin Process has a New York City representative well qualified to discuss color problems with stylers of fabrics.

What are YOUR colored yarn or yarn dyeing requirements (cotton or spun rayon)? Write to our nearest office and let us make recommendations, free of all obligations.

FRANKLIN PROCESS COMPANY
Natural Yarns, Colored Yarns, Glazed Yarns, Dyeing and Processing Machines
Providence • Philadelphia • Greenville
Chattanooga • New York Representative, 40 Worth Street • Chicago Representative, 100 W. Monroe Street.



COLORED YARNS FOR YARN DYED FABRICS
(Cotton or Spun Rayon)
In addition to the products illustrated Franklin Process Dyeing is used in every type of yarn dyed fabric including Chenille bedspreads and rugs, terry fabrics, narrow fabrics, dress goods, elastic fabrics, wire covering, braids, hosiery, knit goods, curtain, drapery and upholstery fabrics.

Franklin Process

★ SPECIALISTS IN PACKAGE DYEING SINCE 1910

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

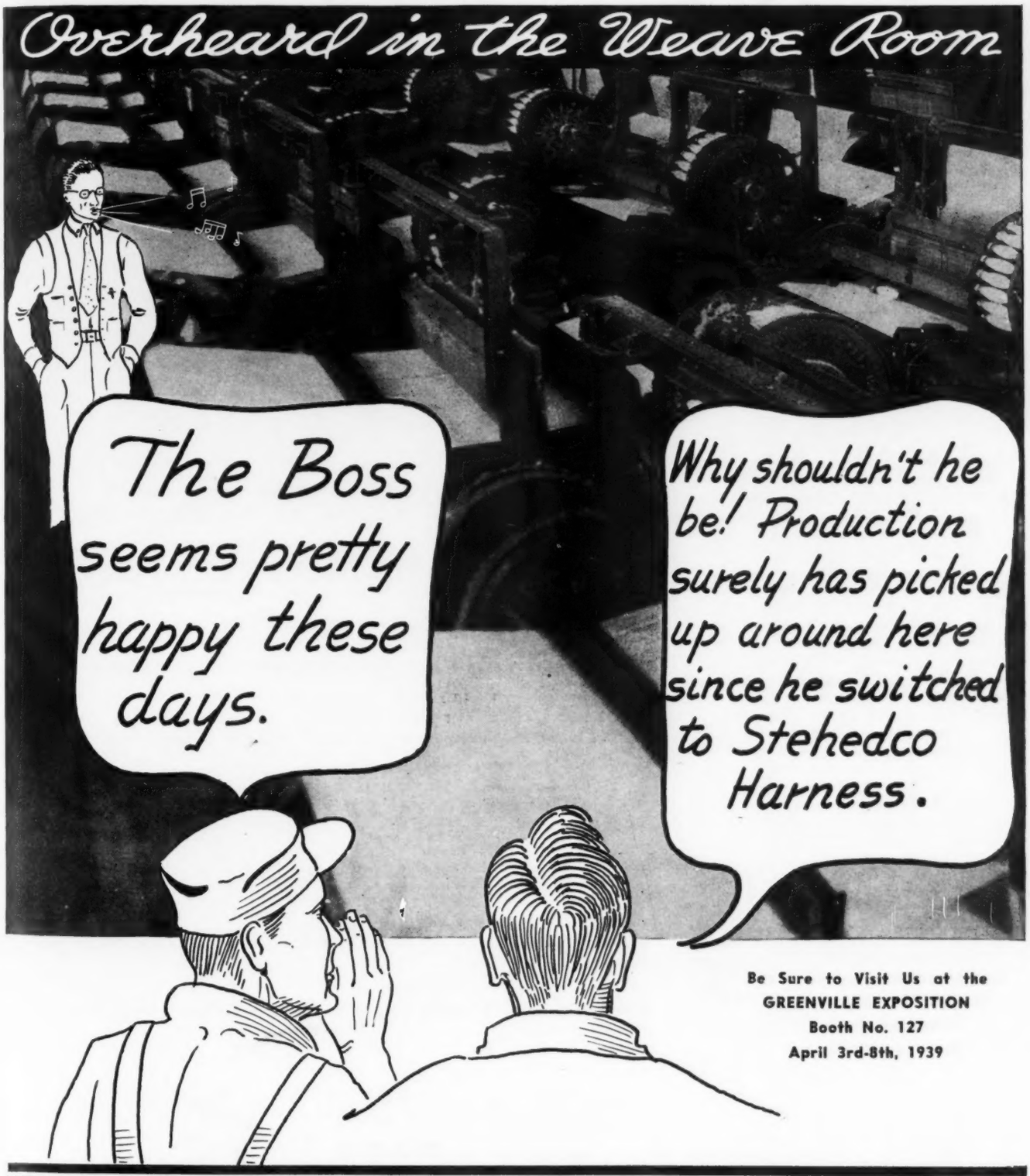
FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840


Overheard in the Weave Room
The Boss seems pretty happy these days.
Why shouldn't he be! Production surely has picked up around here since he switched to Stehedco Harness.

Be Sure to Visit Us at the
GREENVILLE EXPOSITION
Booth No. 127
April 3rd-8th, 1939

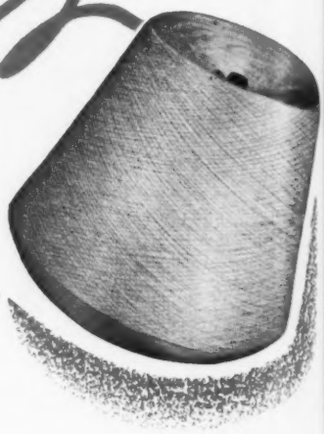
Steel Heddle Mfg. Co.
"STEHEDCO" HEDDLES · REEDS · FRAMES AND HARNESS ACCESSORIES.
2100 W. ALLEGHENY AVE., PHILADELPHIA, PENNA.
BRANCH OFFICES ALL OVER THE WORLD

Preferred by Nine Out of Ten Mills

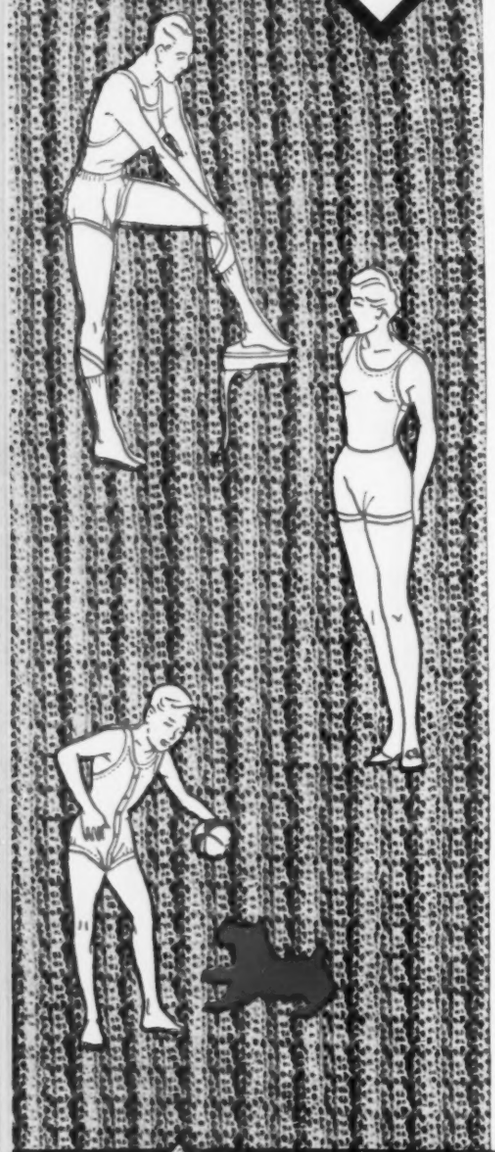
SPINNERS MERCERIZERS DYERS BLEACHERS

S-C-T

Yarns



THE SIGN OF UNIFORMITY IN COTTON YARNS



The sign you can depend on to produce more firsts for you . . . . . The sign that means *all* S-C-T yarns are produced by S-C-T Men and Management in our own plant under our rigid specifications, from cotton bale to finished cones, skeins, tubes or warps.

STANDARD — Durene — Selo — PREEMO

THREADS — COMBED SAKS — COMBED PEELERS

Progressiveness without loyalty to employees and customers is but a shell.

ALBERT G. THATCHER, 1921

SPINNERS MERCERIZERS S-C-T DYERS BLEACHERS

STANDARD · COOSA · THATCHER CO.

Established 1877

Chattanooga, Tennessee

Sales and Executive Offices, 806 Lafayette Bldg., Philadelphi

Offices in Principal Yarn Centers

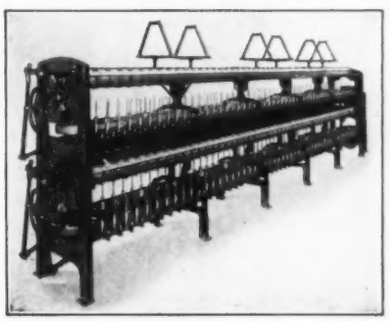
Can you spare just 3 minutes?

please?

to read this list of "10 points of advantage" in the Fletcher "WHIRLWIND" Extractor:

1. *Open top*—built low—easy to load and unload.
2. *Quick acceleration*—high speed—thorough extraction.
3. *Deep Basket*—large capacity—monel metal drum.
4. *Multiple V-belt drive*—quiet, efficient, dependable.
5. *Effective self-balancing*—insures greatest stability.
6. *Balanced curb*—weight equally distributed on three stands.
7. *Durable construction*—curb 3/8" boiler plate steel.
8. *Automatic Hydraulic brake*—"finger-tip" controlled.
9. *Automatic timer*—shuts off motor—applies brake.
10. *True all around performance*—handles all classes of work without fear or favor.

and this brief summary of the features of the Fletcher "APEX" Twister—*all* of which only the "APEX" offers:



1. OILWELL SPINDLES—with a year's supply of cool, clean oil.
2. UNIT CONTROL—a compact, self-contained unit controlling both twist and traverse from one end, with a smooth steady motion. Clean, accessible, convenient.
3. OILLESS BEARINGS at every advisable point.
4. Easy adjustment of spindle swings, facilitating proper belt contact and uniform spindle speeds.
5. Individual spindle swing supports, mounted on solid steel rails.
6. Improved traverse motion, providing "straight line" pull.
7. Each deck driven by an individual motor.
8. Motors mounted on sliding base, with an easy, positive, automatic belt adjustment.
9. Light, pressed steel take-up rolls driven by the spindle belt, through UNIT CONTROL, affording constant relation between take-up and spindle speeds.
10. Low overall height in the double deck model, convenient for girl operators.
11. Thread guides individually adjustable in every direction.
12. Lapless and endless belts.
13. Power-saving large idler pulleys for high spindle speed. Convenient and effective belt alignment for right and left hand twist.
14. Back idlers on ball bearings, seal packed, assuring absolute cleanliness.
15. Twist gears easily accessible.

Thanks and if you have another minute to fill out this coupon you'll be sent *all* the data on either or both the Twister and Extractor . . . may find a new source for saving . . . the solving of many of your current problems. *"Get the Facts—and you'll get a FLETCHER!"*

F. FLETCHER

FLETCHER WORKS · GLENWOOD AVENUE AND SECOND STREET · PHILADELPHIA
FORMERLY SCHAUM AND UHLINGER—ESTABLISHED 1850

Without obligation send me all data on ☐ the "Whirlwind" Extractor ☐ the "Apex" Twister.

NAME .....

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COMPANY .....

ADDRESS .....

T.W. 2-28

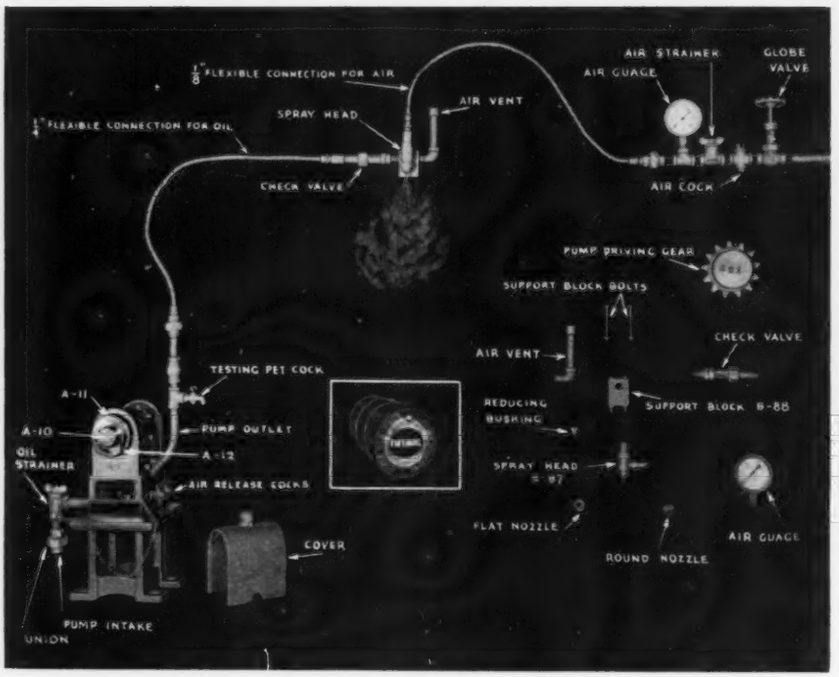
Announcing

TINTINOIL

Certified, Oil-Soluble, Salts-Free

FUGITIVE DYES

for TINTING Rayon, Acetate and other Synthetic Textile Fibres



TINTINOIL
Process Mechanical Equipment

Installations made for one or more colors. Process and Equipment Protected by U.S. Patents, License Nos. 1550396 — 1618893 —1956450—2006779 —2099146—2115218.

TINTINOIL involves the control of three essential factors in RAYON MANUFACTURING by one simple application — MOISTURE, LUBRICATION, TINTING.

TINTINOIL imparts a tenacity similar to good running cotton, produces a firm web, reduces the crunch, eliminates static and split laps.

TINTINOIL is the most convenient and economical process known. NO EXTRA HANDLING. No drying. No heating. No wadding of stock or curled fibres.

TINTINOIL is READY for USE. Any color. Shipped in light steel drums which serve for supply reservoir. You can have any color by the turn of a valve.

TINTINOIL Base Oil (SS) concentrate is also available for conditioning white Rayon stocks where tinting is *not* necessary.

BORNE SCRYMSER COMPANY

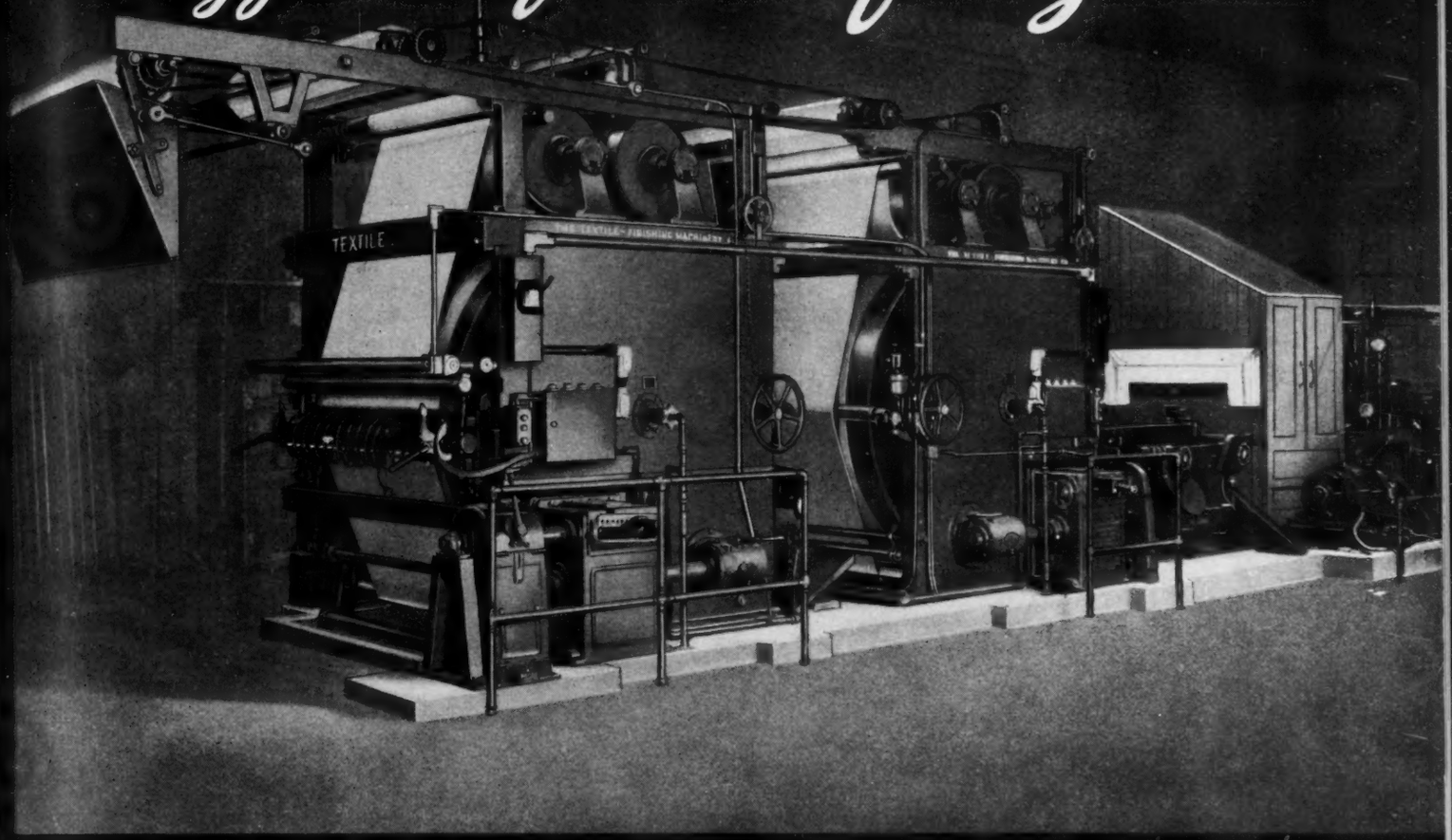
Originators *of the* BRETON MINEROL PROCESS *for* CONDITIONING COTTON

17 BATTERY PLACE · NEW YORK

Southern Sales Manager: H. L. Siever, Charlotte, N. C.

Representatives: R. C. Young, Charlotte, N. C. W. B. Uhler, Spartanburg, S. C. John Ferguson, La Grange, Ga.

6 types of Sanforizers



1. **STANDARD SANFORIZER**
2. **STANDARD SANFORIZER WITH STANDARD REVERSE FINISH UNIT**
3. **SUPER SANFORIZER**
4. **SUPER SANFORIZER WITH SUPER REVERSE FINISH UNIT**
5. **TANDEM SUPER SANFORIZER**
6. **UNIVERSAL TANDEM SUPER SANFORIZER**

Textile builds these six types of machines for Sanforizing fabrics ranging from the sheerest construction up to and including heavy weight gabardines, moleskins, whipcords, denims and ducks. . . . Special features of design include: Automatic Lifting Control for Ironing Shoes, Hydraulic Tension Control and Automatic Centering Device for Blanket, and Patented Electric Guiders.

Send for booklet "Sanforizing Machinery" No obligation.

Licensed by CLUETT PEABODY & CO., INC., as Manufacturers of COMPLETE SANFORIZING EQUIPMENT

Machinery for Bleaching, Mercerizing, Dyeing, Drying, Printing and Finishing Textile Fabrics and Warps

The Textile-Finishing Machinery Co.

New York Office
50 Church St.

Southern Office
Johnston Bldg., Charlotte, N. C.

Providence R I

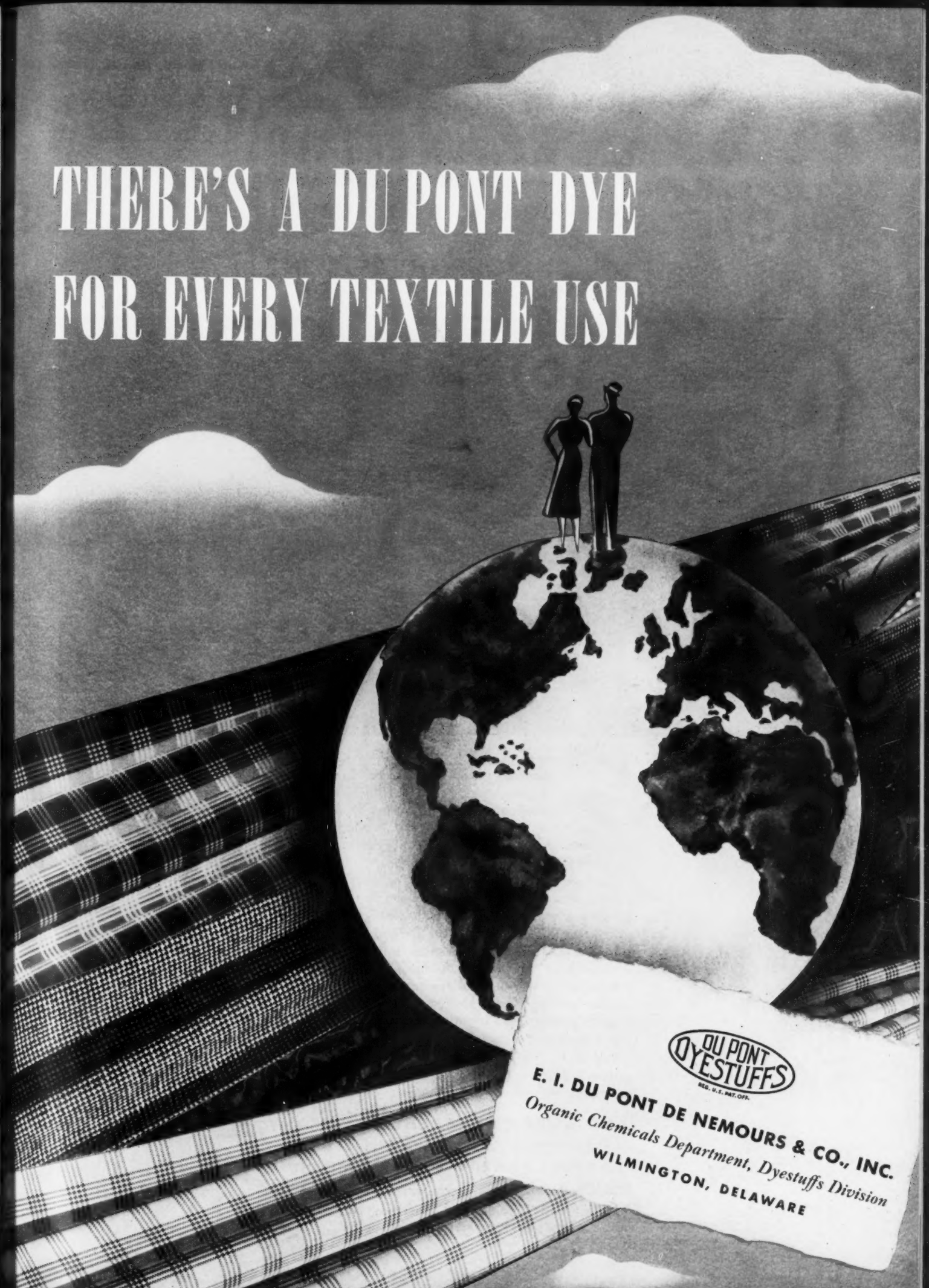
EACH THREAD SHOWS THE RESULT OF AUTOMATIC HUMIDITY CONTROL

Day after day, Winter and Summer alike, the ideal manufacturing climate can be maintained automatically with the aid of the Foxboro Humidity Control. Fibres that are strong and flexible, hence easily woven, are obtained. During weaving the correct fibre regain will be maintained and fibres will "lay up" to assure uniformly fine bolts. « « « All this means saving by minimizing waste and rejects and attaining more efficient production. You will find Foxboro's intimate knowledge of textile requirements, and the many developments and improvements Foxboro has engineered in the textile field, of vital interest. Write for complete information to the textile division.

THE FOXBORO COMPANY
84 Neponset Ave., Foxboro, Mass., U.S.A.
Atlanta Office: 101 Marietta Street Building
Branch Offices in 25 Principal Cities

FOXBORO
REG. U.S. PAT. OFF.
RECORDING CONTROLLING · INDICATING
Instruments
TEMPERATURE · LIQUID LEVEL
PRESSURE · FLOW · HUMIDITY
Controlled ACCURACY RESPONSE

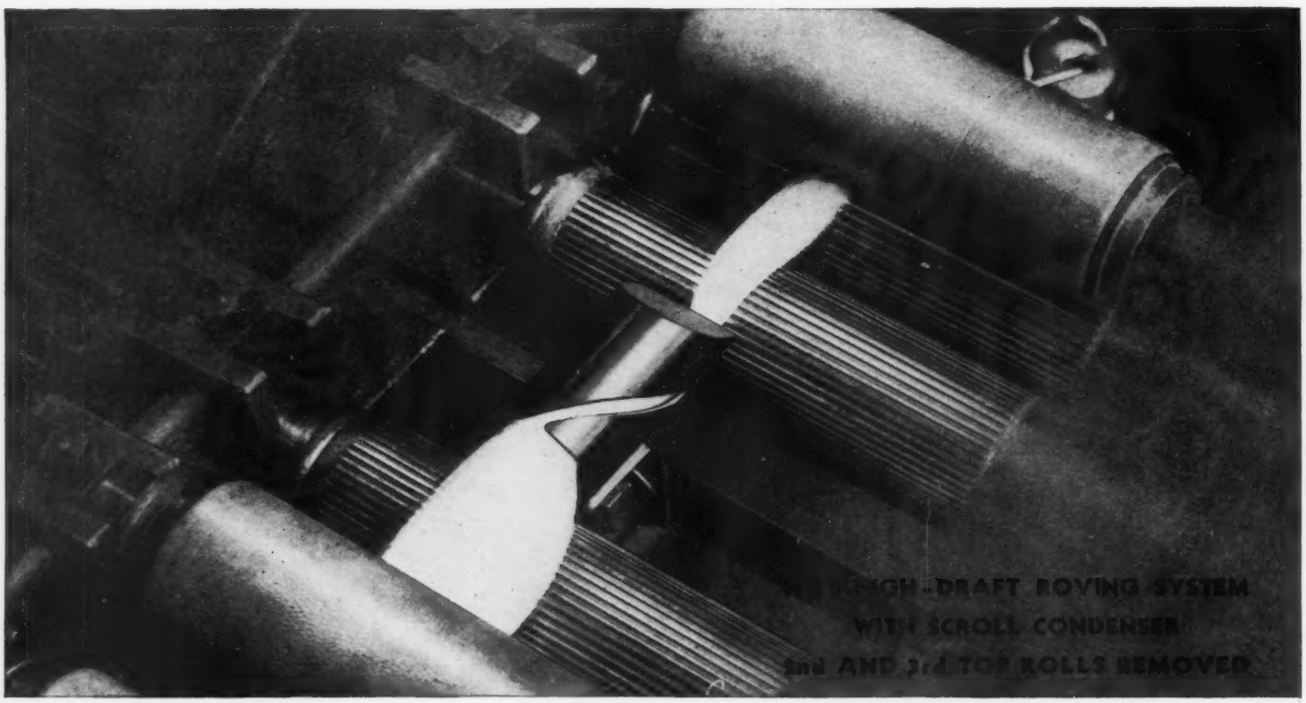
THERE'S A DU PONT DYE FOR EVERY TEXTILE USE



DU PONT DYESTUFFS
REG. U.S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO., INC.
Organic Chemicals Department, Dyestuffs Division
WILMINGTON, DELAWARE

HOW TO MODERNIZE YOUR CARD ROOM AT SMALL COST AND REALIZE UP TO 90% ON YOUR INVESTMENT



Because the H & B High-Draft Roving System can be (and has been) successfully applied to practically every type and make of existing roving frame, it offers an opportunity to modernize your card room at relatively small cost (perhaps $7,000 to $10,000).

Furthermore this outlay is quickly paid for by the large savings effected, the return per annum on the investment sometimes amounting to as much as 90%.

The H & B High-Draft Roving System is usually applied to intermediate and roving frames. It is designed to take a sliver from the drawing frame and draft up to 35, producing up to 6.00 hank roving in one operation, for regular or long draft spinning. The number of rollers (4 or 5) is determined by the drafting requirements.

It is now successfully operating in over 50 mills.

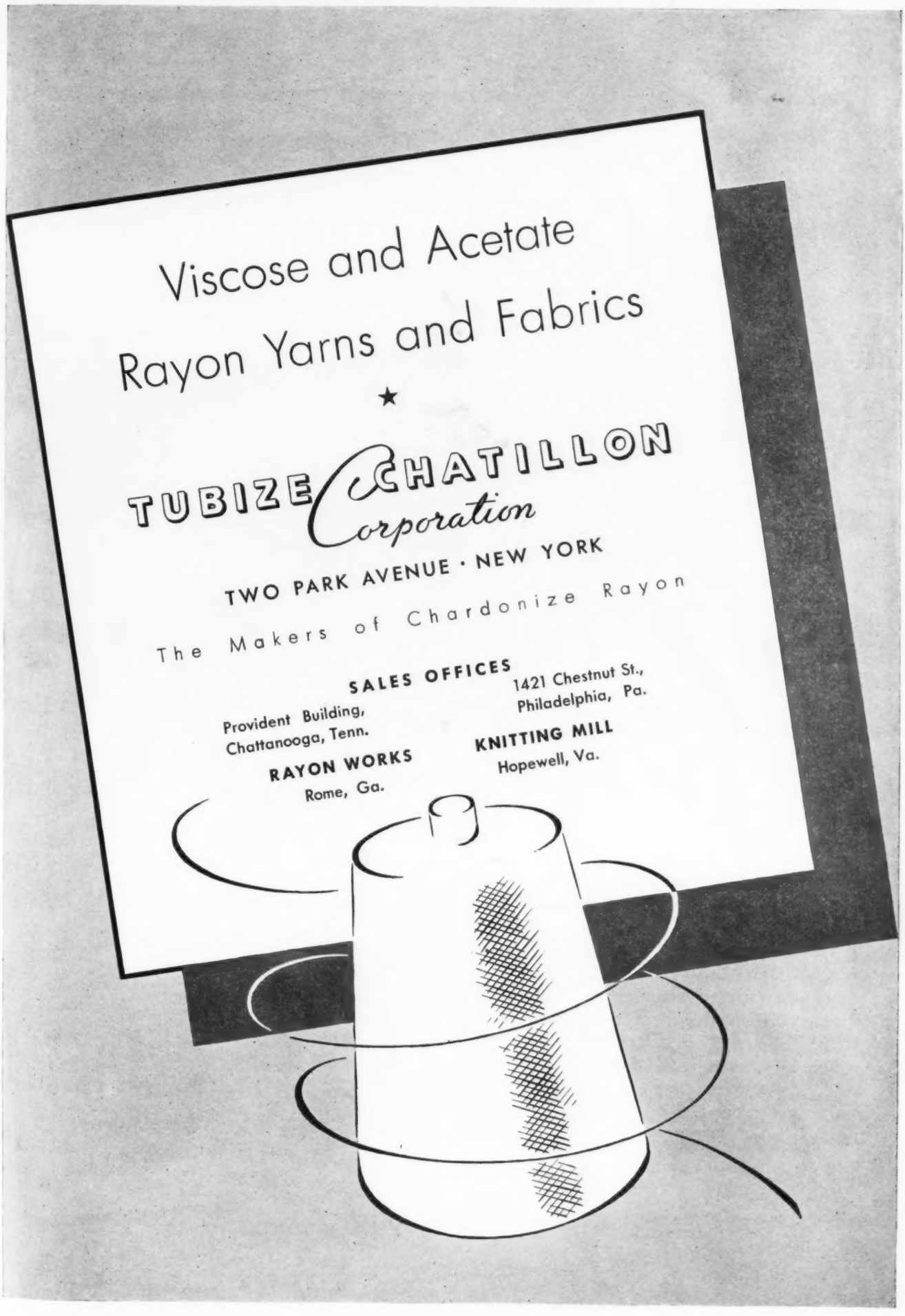
Let an H & B Technical Survey determine what this system will do for YOU. One of our engineers will call on request without obligating you in any way.

H&B AMERICAN MACHINE COMPANY

• • • *TEXTILE MILL MACHINERY* • • •

PLANT AT PAWTUCKET, RHODE ISLAND

BOSTON OFFICE: 161 Devonshire St. • ATLANTA OFFICE: 815 Citizens and Southern National Bank Bldg. • CHARLOTTE OFFICE: 1201-3 Johnston Bldg.


Viscose and Acetate
Rayon Yarns and Fabrics
★
TUBIZE CHATILLON
Corporation
TWO PARK AVENUE · NEW YORK
The Makers of Chardonize Rayon
SALES OFFICES
Provident Building,
Chattanooga, Tenn.
1421 Chestnut St.,
Philadelphia, Pa.
RAYON WORKS
Rome, Ga.
KNITTING MILL
Hopewell, Va.

ABOUT THIS NEW

Modinal* ES

IT'S EXCELLENT FOR SCOURING!

HERE'S an unusual new kind of fatty alcohol sulfate. It's MODINAL ES—the modern detergent with a clean, fresh odor. The excellent foaming qualities of MODINAL ES make it especially effective for scouring and dyeing all types of textiles. It is highly soluble in both hot and cold water—and its solutions remain clear even at low temperatures. MODINAL ES is available in paste form.

You'll want to have more information about this remarkable new agent. Have a representative of one of the sales agents listed below give you the story.

* "Modinal" is the trade-mark used by the Gardinol Corporation to designate a group of its fatty alcohol sulfates.

GARDINOL CORP.
GENERAL OFFICE
WILMINGTON, DEL.

SALES AGENTS:
PROCTER & GAMBLE DISTRIBUTING CO., CINCINNATI, OHIO
E. I. DU PONT DE NEMOURS & CO., INC., WILMINGTON, DEL.

Extra Wear

1939 promises to be a salesman's year—a year in which *selling* will pay big dividends.

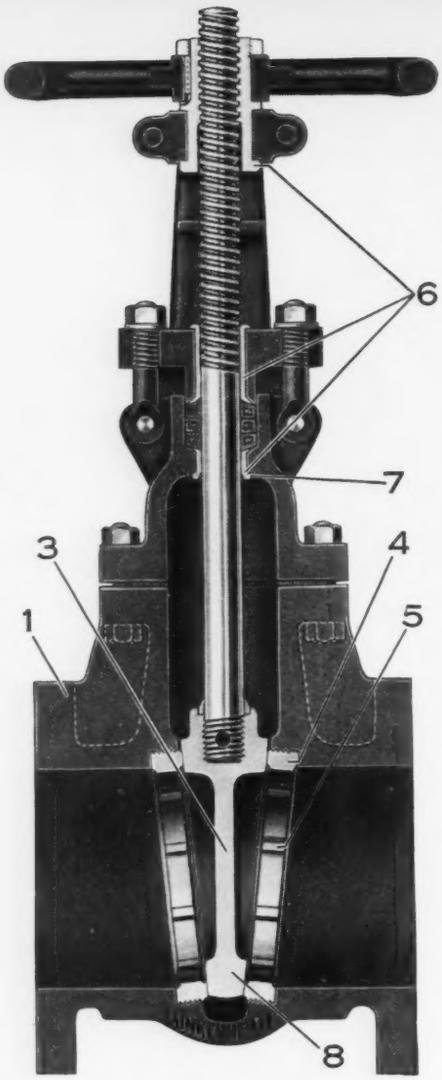
American's Fabric-cord Yarn helps sell hose. It not only works-up with less waste, fewer seconds, lower production costs . . . it adds a talking point, at the point of sale—*extra wear.*

The Fabric-cord identification transfer is a mark of better quality—the mark of American's Super-Mercerized balanced twist yarn.

AMERICAN
YARN AND PROCESSING COMPANY
MOUNT HOLLY N. CAROLINA

CHICAGO, ILLINOIS	CHATTANOOGA, TENN.	HIGH POINT, N. C.	PROVIDENCE, R. I.	NEW YORK, N. Y.	PHILADELPHIA, PA.	CHARLOTTE, N. C
Mr. E. W. Wood	Mr. Tom Moore	Mr. E. J. Holbrook	Mr. Jas. R. Moore	Schoolfield-Sauer Co.	Wm. S. Montgomery	Cosby & Thomas
222 West Adams St.	735 Chestnut St.	Mallory Street	434 New Industrial Trust Building	40 Worth St.	1600 Arch St.	Johnston Building

When You Specify Iron Body Gate Valves Use this Check List



Iron Body Bronze Mounted

Standard { 125 lb. S.P. / 175 lb. W.O.G.

Heavy { 175 lb. S.P. / 350 lb. W.O.G.

Extra Heavy { 250 lb. S.P. / 500 lb. W.O.G.

Also regularly available in All-Iron patterns with renewable seat rings, for handling solutions which attack bronze but not iron.

	LUNKENHEIMER
1. *Sound tough castings* that will safely withstand operating pressures and temperatures.	✓
2. *Uniform interchangeability of parts*, so that any replacement or repair part will be exactly the same size as that which is to be renewed.	✓
3. *Solid Disc* (not cored) that will not distort under temperature variations and pressure of the fluid handled.	✓
4. *Heavy renewable bronze seat rings* with special machine finish, and strong deep-cut threads that can be screwed tightly into the body without risk of springing the rings.	✓
5. *An ample number of substantial lugs* on seat rings to facilitate renewal.	✓
6. *Bronze bushings* between the bronze stem and iron parts of valve, to prevent corrodible contact and consequent scoring of stem and packing, which causes leaky stuffing boxes.	✓
7. *Back-seat bushing* in bonnet to provide a tight seat for repacking valve in wide open position.	✓
8. *Disc perfectly guided* so that it rides straight and true to its seat without touching seat rings until near the point of closure. To ensure this perfect guiding, the *guide ribs in the body* as well as the guide channels in the disc must be accurately machined.	✓

The sure way for you to obtain *all* these service-giving and money saving features is to specify Lunkenheimer Iron Body Gate Valves. Through their use you will effect substantial reductions in maintenance expense and valve costs.

ESTABLISHED 1862
THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
NEW YORK CHICAGO
BOSTON PHILADELPHIA
EXPORT DEPT. 318-322 HUDSON ST., NEW YORK

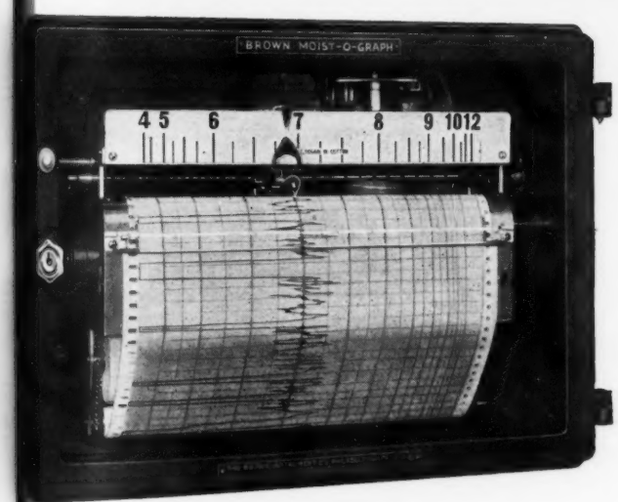
If you have no copy of List Price Schedule R1 giving new list prices of Lunkenheimer Products, ask your local Lunkenheimer distributor or write The Lunkenheimer Co., Cincinnati, Ohio

BOILER MOUNTINGS — LUNKENHEIMER VALVES — LUBRICATING DEVICES

6-79-54

CONTROL MOISTURE REGAIN *HERE*

Increases Slasher Production



A continuous direct reading record of the moisture content of every beam sized is made by the MOIST-o-GRAPH on a 12-in. strip chart. A scale, also calibrated in terms of per cent regain and mounted above the chart, enables the operator to set the controller at the desired point to insure the required moisture regain.

25% to 40%

The "Feel" of yarn may give an approximate indication of whether the yarn is wet or dry, but it cannot measure and control per cent regain. Since the weaveability of yarn depends upon the per cent regain, it is important to control the exact moisture content.

The Brown MOIST-o-GRAPH not only measures the moisture content, but it also controls it within the desired 7%—8% regain. Thus, a free-running, uniformly flexible yarn is insured at all times—regardless of the weight of the yarn or the number of ends.

MOIST-o-GRAPH's method is instantaneous. No longer is it necessary to wait hours for a laboratory analysis.

The Brown MOIST-o-GRAPH operates on the principle that, for every per cent regain, yarn has a corresponding electrical resistance. That resistance is determined by means of an electrically energized, moisture detecting roller continually in direct contact with the yarn as it passes over the back press roll.

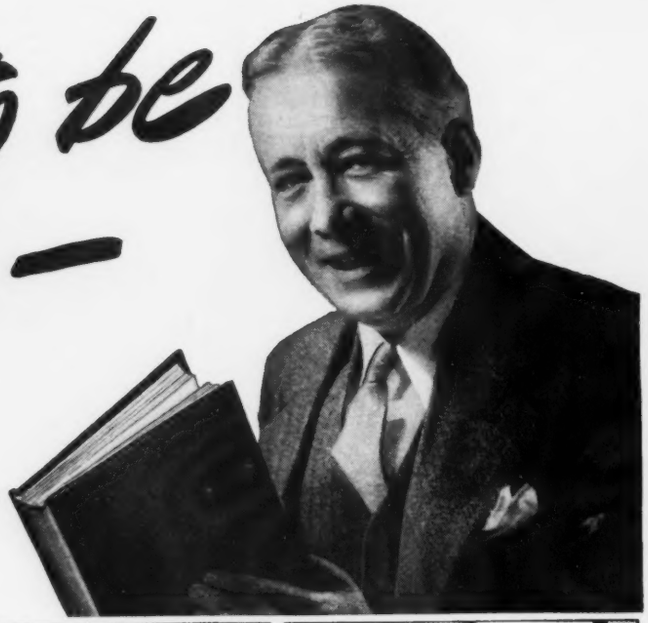
As this sensitive detecting roller measures only the actual moisture content of the yarn—not surrounding atmosphere—the record produced is an accurate measurement and can be used to control regain of the sized warp. Guesswork and spoilage are eliminated, and production greatly increased.

The Brown MOIST-o-GRAPH Control System enables you to maintain constant tensile strength and flexibility of the yarn. It eliminates mildew, deterioration of size, breakage and "dandruff" on the loom.

Learn how Brown MOIST-o-GRAPH Control increases slasher production 25% to 40%. Write for Bulletin 93-1. THE BROWN INSTRUMENT COMPANY, *a division of Minneapolis-Honeywell Regulator Co.*, 4509 Wayne Avenue, Philadelphia, Pa. Offices in all principal cities. Toronto, Canada: 117 Peter Street—Amsterdam-C, Holland: Wijdesteeg 4—London, England: 70 St. Thomas' Street, S.E.1—Stockholm, 16, Sweden: Nybrokajen 7.

BROWN MOIST-O-GRAPH

"I used to be a skeptic—



. . . but not now—you can't go against the records made by Taylor Slasher Control"

A mill executive reports: "After 6 months operation, we found that Taylor Slasher Control increased weave room efficiency . . . decreased shedding in looms . . . permitted more-uniform cloth weights, better appearance and more-uniform feel of cloth . . . increased slasher production . . . decreased squeeze roll covering costs . . . and added yarn on beam due to uniform tension."

NOW *for some pages from Taylor Records*

Results in **MILL NO. 13**

$400 saved annually in sizing material costs.
40% less warp loom stops
1% increase in weave room efficiency
1% cotton saving
5 tons coal saved weekly

Results in **MILL NO. 14**

15% decrease in sizing material costs
1% increase in weave room efficiency
1% cotton saving

Results in **MILL NO. 16**

20% increase in slasher production
51% decrease in warp loom stops
2% increase in weave room efficiency

Results in **MILL NO. 79**

30% increased slasher efficiency
6% increase in weave room efficiency

IN YOUR MILL—WHAT CAN YOU SAVE?

➡ A properly engineered Taylor Coordinated System of Slasher Control accomplishes most or all of these results in the usual mill:

Saves size ingredients; Increases slasher production; Reduces warp loom stops; Decreases seconds; Gives uniform hand and better cloth appearance; Saves steam; Economizes on cotton.

Over 85 installations are in leading textile mills in the East and South. A vast experience is in the hands of Taylor Engineers who pioneered in Automatic Slasher Control and who have been designing systems for it for many years. It is available for your mill . . . for working out the most efficient and economical system in line with your special needs. No two mills are exactly alike and Taylor recognizes it.

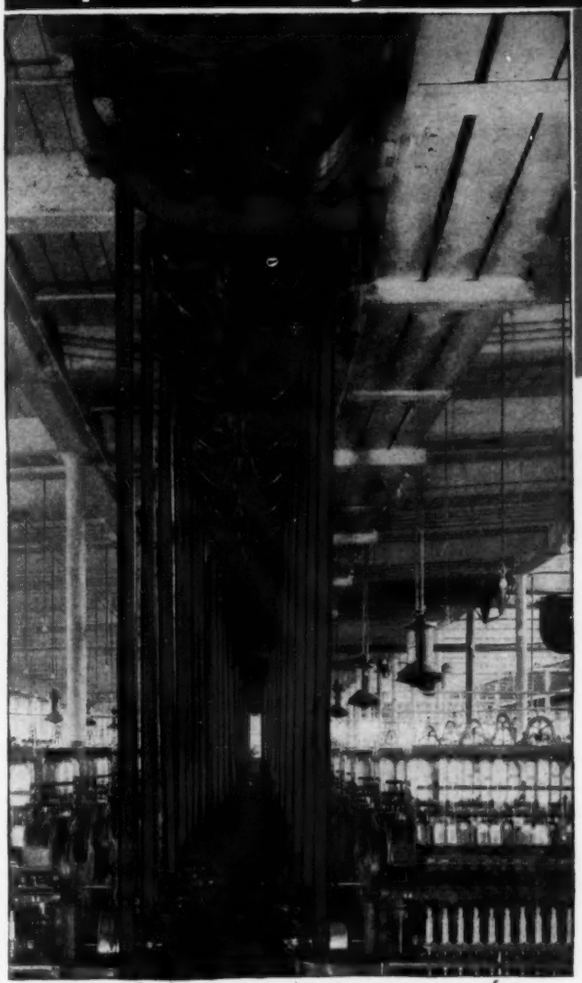
How to use this service? Tear out this last paragraph, attach it to your letterhead, write, "I want to discuss Slasher Control with a Taylor Representative," and send it to Taylor Instrument Companies, Rochester, N. Y. Plant also in Toronto, Can. Manufacturers in Great Britain —Short & Mason, Ltd., London, England.

Taylor

Indicating · Recording · Controlling

TEMPERATURE, PRESSURE, FLOW *and* **LEVEL INSTRUMENTS**

Equalized Ply Stresses Mean Economical Drives



Condor Compensated on a bicycle drive in a textile mill.

Condor Compensated PATENTED TRADE MARK REGISTERED BELT

REDUCES

PLY RUPTURE
PLY SEPARATION
PULLEY-SIDE WEAR

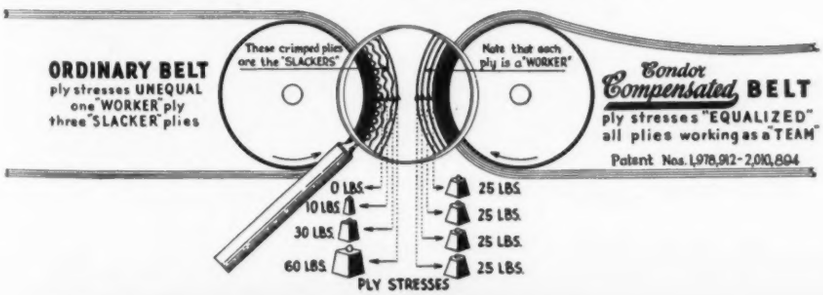
Condor Compensated—like any other belt—does most of its work under tension as it flexes around the pulley. ***But unlike any other belt,*** it is relieved of the destructive effects of uneven stresses and strains—because each ply is compensated to equalize each ply's load.

The important benefits to you in this patented and exclusive construction is that ply ruptures and ply separation are eliminated . . . and there's less wear on the pulley side. Nine other advantages help contribute to Condor Compensated's efficient and economical transmission of power.

On large or small pulleys, you can operate Condor Compensated at *low tension* because of a special pulley-side surface. This feature—plus its Compensated construction—increases both belt and fastener life, decreases bearing, shafting and hanger troubles.

12 ADVANTAGES

1. Ruptures in outside ply eliminated.
2. Freedom from ply separation.
3. Longer fastener life.
4. Can be operated on smaller pulleys.
5. Less bearing, shafting and hanger troubles.
6. For heavy loads, plies may be increased with same pulleys.
7. Operation less affected by atmospheric conditions.
8. Higher overload capacity or margin of safety.
9. Less wear on pulley side.
10. Can be dressed without injury to belt.
11. High production efficiency.
12. Material reduction in belting costs.



THE COMPENSATED PRINCIPLE

Notice in the diagram at left each ply shares its part of the load as the belt flexes around the pulley—where the destructive work is done. Write for your copy of Bulletin 6808C—it explains the Compensated Principle in detail.

THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES AND FACTORIES
30 Townsend St., Passaic, N. J.

C-O-O-L AIR WAS NEEDED

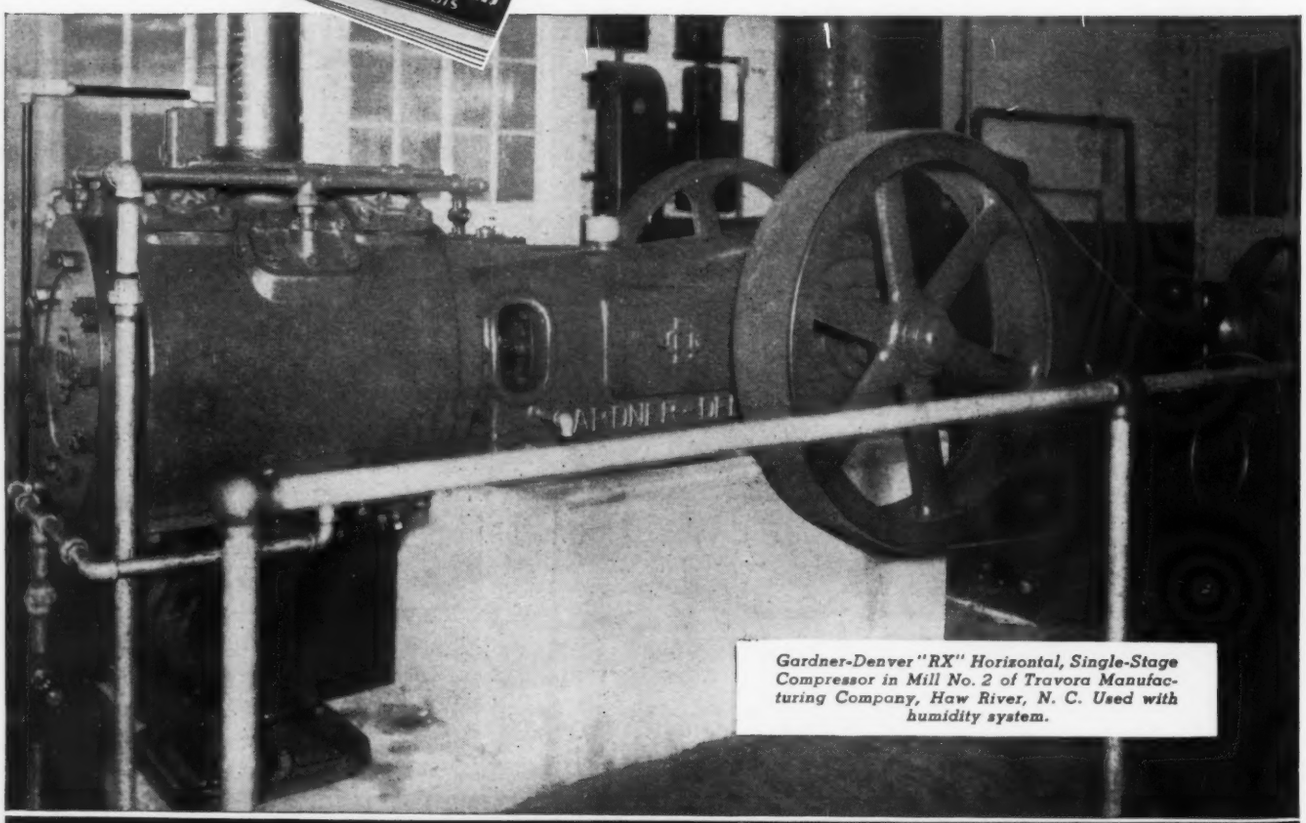
FOR THE HUMIDITY SYSTEM

—so they chose a Gardner-Denver "RX" Compressor

GARDNER-DENVER HAS THE RIGHT COMPRESSORS FOR YOUR MILL

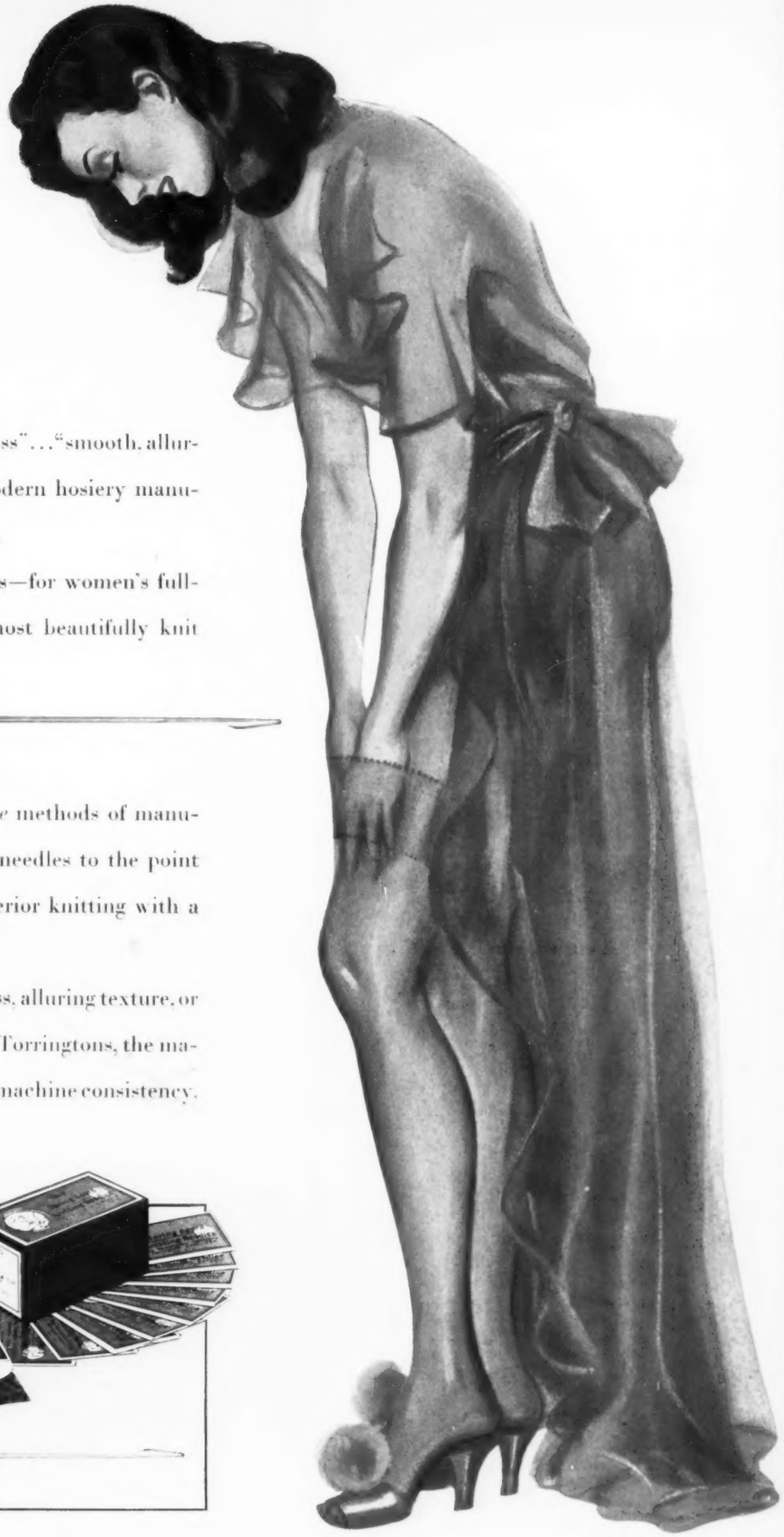
● Every hour, 1872 pounds of water are evaporated in the humidity system of Mill No. 2, Travora Manufacturing Company, Haw River, North Carolina—one of the most progressive textile mills of the South. To accomplish the proper cooling effect with this system, it was necessary to have an air compressor which would furnish air of the lowest possible temperature. The compressor selected was a GARDNER-DENVER "RX".

Gardner-Denver "RX" Compressors require exceptionally low horsepower per cubic foot of air delivered—making possible substantial power savings. They have Electro-Pneumatic Control, which automatically fits the air supply to air needs. They are adaptable to any type of drive. They have the unfailing dependability which textile mill use demands. Write today for illustrated bulletins about Gardner-Denver "RX" and other compressors. Gardner-Denver Company, Quincy, Ill.



Gardner-Denver "RX" Horizontal, Single-Stage Compressor in Mill No. 2 of Travora Manufacturing Company, Haw River, N. C. Used with humidity system.

GARDNER-DENVER 80th ANNIVERSARY YEAR

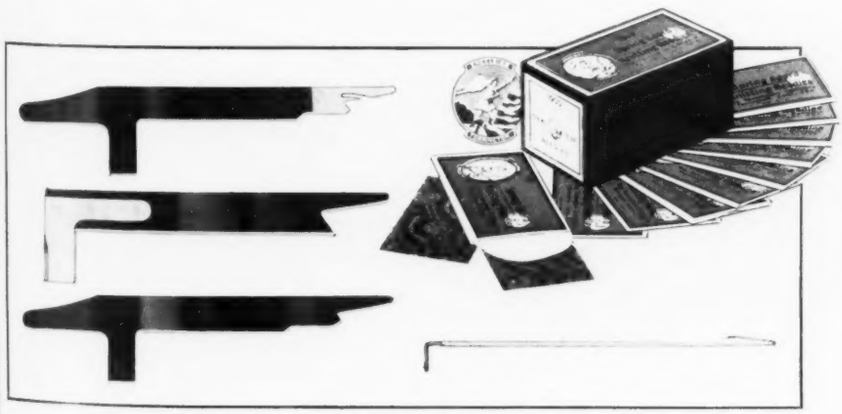


"LIVELY ELASTICITY"... "gossamer sheerness"..."smooth, alluring texture"—with such glowing phrases do modern hosiery manufacturers describe the beauties of their products.

No one denies the truth of these descriptions—for women's full-fashioned hosiery today is far and away the most beautifully knit hosiery the world has ever known.

The part Torrington Needles play in making this beauty possible is important. Through the development of *machine* methods of manufacture Torrington has advanced the quality of needles to the point where they can be relied upon to produce superior knitting with a consistent regularity heretofore unknown.

Whether it is lively elasticity, gossamer sheerness, alluring texture, or other attractions, that give you pride in your line, Torringtons, the machine-made needles, will help you get them—with machine consistency.



TORRINGTON ***Needles and Sinkers***

HERE IS A NEW ANTI-FRICTION BEARING

FOR YOUR TEXTILE MACHINERY

Now you can get the full advantages of *anti-friction* operation with the Torrington Needle Bearing—a new type bearing that meets the specialized requirements of the textile industry.

This new bearing, made by The Torrington Company, is so simple that the cost seldom exceeds that of a plain bushing, yet it gives you full anti-friction construction. It has only two components — a full complement of small-diameter needles and a hardened retaining shell that holds them securely in place and forms the outer race of the bearing.

With the Needle Bearing's low coefficient of friction, you can reduce your operating losses and effect savings in your power bills that will quickly pay for the cost of the bearing. You can step up production, too, for you can operate your machines at higher speeds when you use an anti-friction type of bearing.

The light weight of the bearing gives you still further power savings. The needles give a large contact area in proportion to the size of the bearing, and you can use a small, light bearing to carry severe loads.

And the Needle Bearing will last for years with little service attention. The retaining shell is made with turned-in lips forming a natural reservoir that holds plenty of grease or oil for long periods of operation without renewal. The rotation of the needles constantly provides lubricant to the rotating shaft. Moreover, the lips fit around the shaft with a very small clearance, forming an effective seal against dust and lint.

Many Applications in Textile Mills

You can easily obtain these advantages in your present spinning frames, finishers, reducers, twisters, and other equipment. The Needle Bearing is a compact unit, which is readily pressed into place in the housing.

Consider these advantages in terms of your own requirements and plan to install Needle Bearings when next you dismantle a piece of equipment.

The Torrington Engineering Department will gladly cooperate with you in determining suitable applications. For further information write for Catalog No. 12. For Needle Bearings to be used in heavier service, request Circular No. X from our associate, Bantam Bearings Corporation, South Bend, Ind.

The Torrington Company
ESTABLISHED 1866
Torrington, Conn., U.S.A.
Makers of Ball and Needle Bearings

Branch Offices in all Principal Cities

TORRINGTON NEEDLE BEARING

Wipe out FINISHING TROUBLES

Cut down FINISHING COSTS

YOU do both when you specify Laurel Soaps, Oils and Finishes . . . and get a better job.

Prepared scientifically to meet actual textile finishing conditions, Laurel Finishes wipe out trouble spots and speed up production.

Manufacturers find it profitable to use our 30 years' experience, research, mill tests, and constant contact with textile problems to help them get improved scouring and finishing—smoother, softer yarns and fabrics—maximum production *at a saving*.

Why not you? There's no obligation. Ask our representative or write us direct about specific case histories.

FOR KNITTERS, THROWSTERS, MERCERIZERS, BLEACHERS, DYERS, AND FINISHERS

Soaking Oils	Emulsions (for Yarn Conditioning)	Soaps—
Hydrosol	Hosiery Finishes	Pure Olive
Rayon Oils	Splashproof #50	Palm Oil
Wool Oils	Laureltex #340 (Transfer Remover)	Red Oil
Boil-off Oils	Supersulfates	Solid—Flake—Powder

Laurel

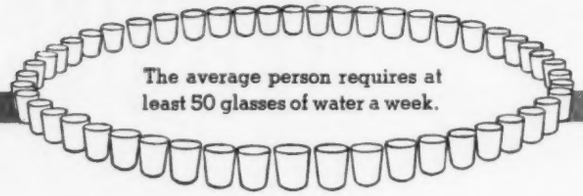
There's a Laurel product to suit your purpose.

SOAP MANUFACTURING COMPANY, Inc.

Wm. H. Bertolet's Sons Established 1909

2606 EAST TIOGA STREET, PHILADELPHIA, PA.

Warehouse Stocks at Paterson, N. J. — Chattanooga, Tenn. — Charlotte, N. C.



BURNOUT-PROOF MOTORS

SLASH REPAIR COSTS

Engineered right out of the water cooler maintenance picture. That's what Westinghouse has done to burnouts, a common and costly source of motor trouble. Brushes and commutators, the cause of burnouts, have been eliminated. In addition, greater efficiency makes possible a smaller motor that uses less current, and yet has ample reserve power.

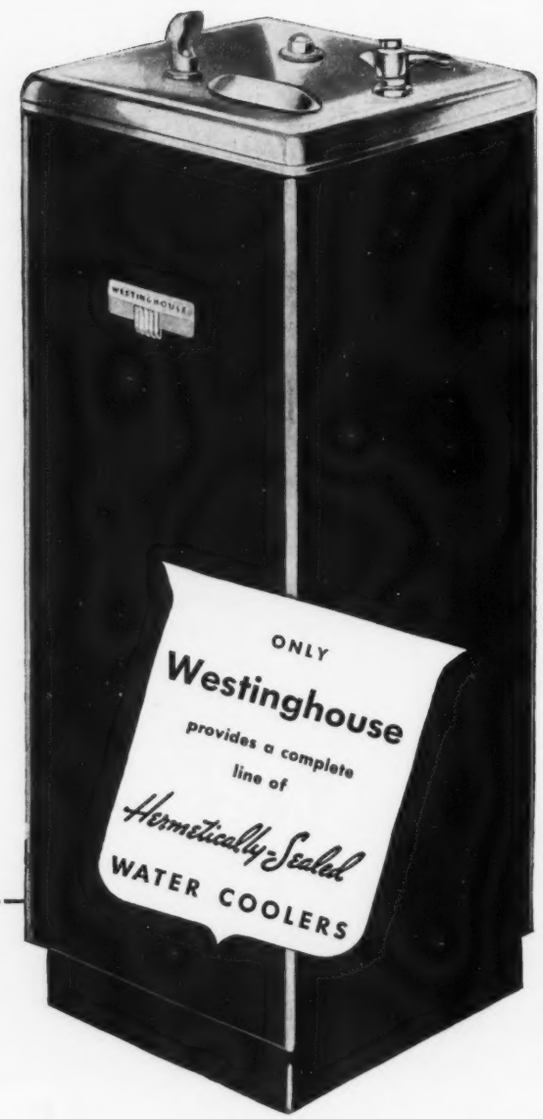
Other Exclusive "PLUS VALUE" Features

Stainless Steel Top . . . Special Capacity Booster . . . High Efficiency Cooling Chamber . . . Built-in Watchman Protection . . . Permanent Oil Supply . . . Hermetically-sealed Mechanism.

No grit, dirt, rust or corrosion . . . the things that cause most machinery to wear out, can harm the Westinghouse mechanism because it is Hermetically-sealed inside an airtight case of solid steel.

Because it is Hermetically-sealed, Westinghouse provides a plan for five years' protection on the sealed-in mechanism.

This is based on the EXTRA years of trouble-free performance which experience shows you can confidently expect.



Westinghouse

WATER COOLERS

Explosion-proof models available

FREE. Ask your Westinghouse dealer for free copy of a useful folder—"How to Check Drinking Water Costs" or mail this coupon to—Westinghouse Electric & Manufacturing Company, Section 9037, Mansfield, Ohio.

NAME_____

ADDRESS_____

CITY_____ STATE_____

Why so many Builders of Textile Machines build in

WHITNEY CHAIN DRIVES

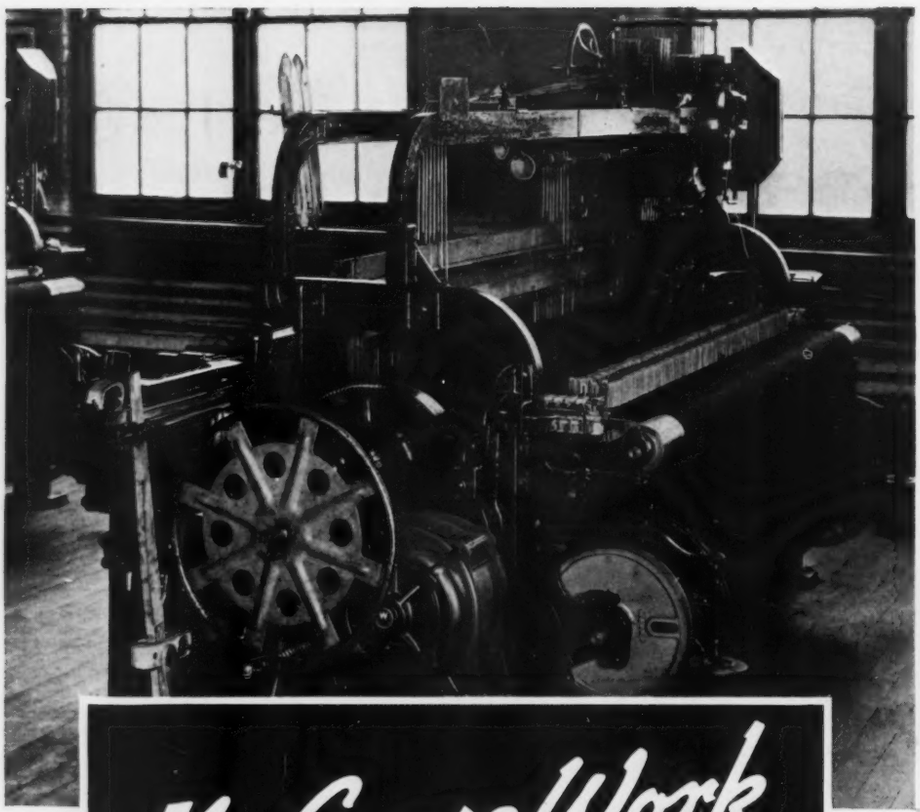
A score or more of the industry's leading machine builders use Whitney Chains . . . to guarantee their customers unfailing, long-term service. These manufacturers know that their names are safe with the name of Whitney and what it stands for: Advanced design, the best of heat-treated alloy steels, and high-precision manufacturing standards. All of which is translated, on the job, into the most efficient method of modern power transmission.

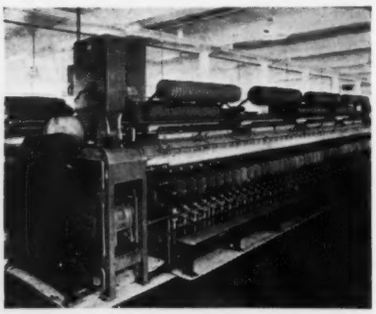
So whether you use Whitney Chains for original or replacement equipment . . . remember, on any requirement, "it's always worth while to write to Whitney."

WHITNEY CHAINS

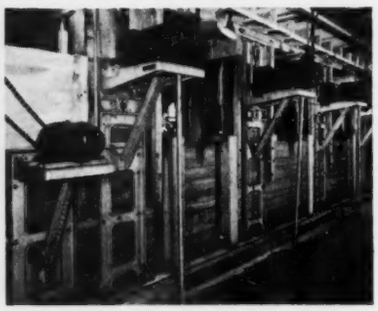
THE WHITNEY CHAIN AND MANUFACTURING CO.

Hartford, Connecticut, U. S. A.





Left — High-speed Crompton & Knowles loom, equipped with Westinghouse drive. Above—Whitin Wool Spinning Frame, equipped with Westinghouse motor with adjustable speed control.



Above — Riggs and Lombard Continuous Washer Equipped with Westinghouse Gearmotors.

No Guess Work HERE!

Careful engineering insures matched performance of textile machinery with Westinghouse equipment

Westinghouse textile-minded engineers work side by side with plant owners and machinery manufacturers to design and build exactly the right electric drives to meet each specific problem. This "triple partnership" saves installation and operating cost, and insures the most satisfactory performance from both machines and electrical equipment. For new equipment, or repair service, call Westinghouse. Address the local office, or write Westinghouse Electric & Manufacturing Company, **Dept. 7-N, East Pittsburgh, Pa.**

J-93825

A FEW TYPICAL PRODUCTS FROM THE COMPLETE WESTINGHOUSE LINE OF ELECTRICAL EQUIPMENT FOR THE TEXTILE INDUSTRY.

Westinghouse

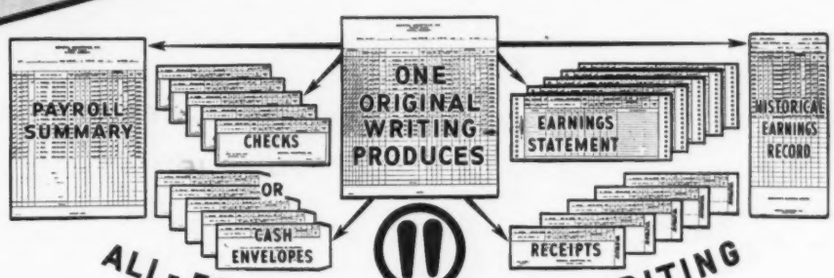
ELECTRICAL PARTNER OF THE TEXTILE INDUSTRY

Get these 4 Payroll Studies—FREE—

YOU CAN CUT OUT COSTLY MACHINES, STOP POSTING AND REWRITING, ELIMINATE ERROR, IN PAYROLL WORK. GET YOUR COPIES!

Also Get Complete Set of Money-Saving Payroll Forms in Use Now in Prominent Mills

Make profit by saving *with* Ditto



DITTO is a magical short-cut that slashes timekeeping and payroll costs. It does away with expensive accounting machinery, makes posting and rewriting unnecessary, makes mistakes impossible, saves hours each day, and accounts for every minute of time and every cent spent. Moreover, Ditto provides payroll records that satisfy Government requirements under Wage-Hour, Social Security, Tax Laws, etc.

KNOW WHAT USERS SAY!

Burlington Mills: "Used in larger plants, now installing in smaller ones. Would have to add to personnel under Social Security Act were it not for Ditto" . . . *Bossong Hosiery Mills:* "Saves many hours, but, best of all, makes error impossible. Also, makes our forms, and is so useful we couldn't do without" . . . *Ashe Hosiery Mills:* "Ditto payroll method is one of the best things we ever did—eliminates error, saves time; couldn't do without" . . . *McLaurin Hosiery Mills:* "It is the complete payroll system, with minimum clerical work . . . " and so on by the score.

With profit margins narrow enough these days, the impressive economies of the swift One-Writing Ditto Payroll Method are well worth having. Many mills are profiting with Ditto, others adopt Ditto daily. These remarkable payroll studies, offered here to mill management, is the way to begin. Send for yours now!

Ditto *Inc.*
2218 W. Harrison St., Chicago, Illinois

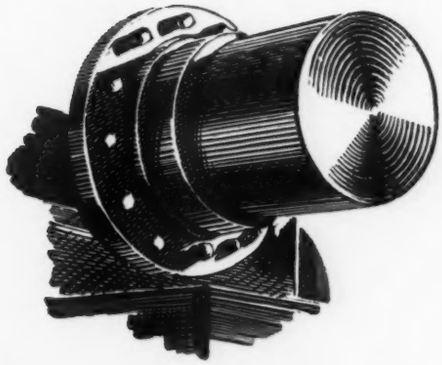
Gentlemen: At no obligation to me please send your detailed payroll studies, "Streamline Your Payroll."

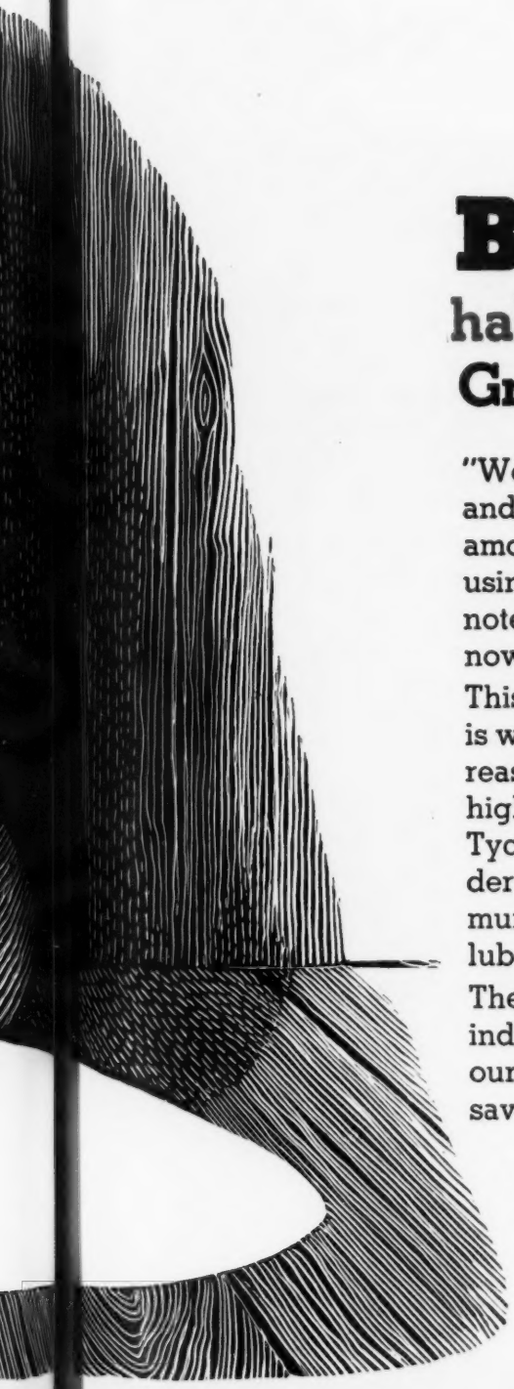
My Name and Title.....

Mill.....

Town.....*State*.....

WASTE
shows up quickly
HERE...
INDUSTRIAL
TYCOL
OILS-GREASES
TIDE WATER
THERE IS A COMPLETE LINE OF TYCOL LUBRICANTS





BUT IN BEARINGS

half the grease oozed away until Tycol Green Cast Greases revealed the losses

"We felt that the lubrication job was not being well done. Pressures and temperatures seemed too high for the grease we were using. The amount used, too, was apparently excessive. Since we have been using Tide Water Greases there are differences that are readily noted. We were formerly compelled to pack the bearings twice a day; now we get along with one filling a day."

This plant also enjoys a feeling of confidence that the lubrication job is well done. Maintenance and replacement have been lowered. The reasons are easily understood: Ordinary greases formerly used were high in soap – soap necessary to give "body" to light bodied oils. Tycol Green Cast Greases are compounded of paraffine-base cylinder oils . . . oils that make possible a full-bodied grease with a minimum of soap. The more oil per pound of grease the greater the lubricating value of the grease.

There is a Tycol Grease and Oil scientifically engineered to fit each industrial requirement. Drop us a line. We will be glad to send one of our engineering staff to show you how "engineered lubrication" can save you money and worry.

TIDE WATER ASSOCIATED OIL COMPANY
TIDE WATER DIVISION, 17 BATTERY PLACE
New York, N. Y.

GREEN CAST GREASES
SCIENTIFICALLY ENGINEERED FOR EVERY INDUSTRIAL USE

Presenting

THE *New*

100-WATT

COOPER HEWITT

FLUORESCENT

Lamp

★

A 50-inch tubular light source with the greatest light output of any lamp of equal wattage

★

a cool blue-white light

★

long lamp life

★

low maintenance

★

low operating cost and high power factor

Here's a lamp that all industry will welcome. One metal working plant has ordered 1500, a textile plant 1000, and this before the lamp was ready for production. There's a reason! The 100-Watt Cooper Hewitt Fluorescent Lamp has ample light output for general industrial illumination. It eliminates shadows, glare and eye-fatigue. It gives more light per watt of energy consumed. Its blue-white light is comfortable and detail-revealing. It provides good industrial color discriminations. There is no bothersome light flutter. » » » It will pay you to learn of this latest and most productive industrial light source.» » » Write for complete details. Ask for a copy of the new bulletin. General Electric Vapor Lamp Co., 849 Adams Street, Hoboken, New Jersey.

GENERAL ELECTRIC

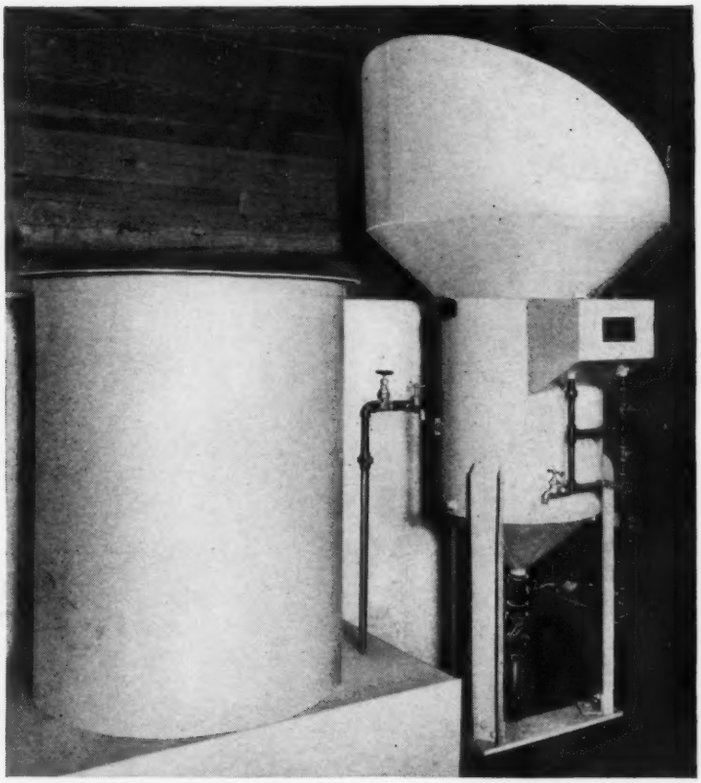
VAPOR LAMP COMPANY

201F

Wherever

BRINE IS USED IN TEXTILE PLANTS★ THIS AUTOMATIC BRINE MAKING PROCESS

SAVES MONEY



If you use brine for any purpose—the Lixate Process can save you money.

This is proven by experience. There are many successful Lixate installations in industrial plants of all kinds, including many modern textile mills.

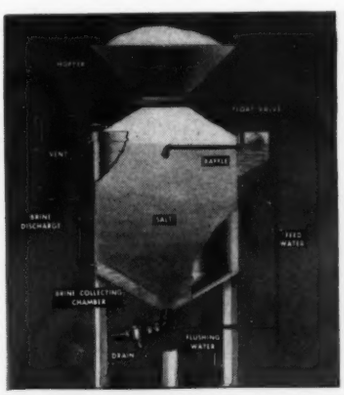
Reasons for its certain savings are simple. The Lixate Process is wholly automatic after recommended grades of Rock Salt are placed in the hopper. (See diagram below.)

It makes *four* important savings. Being automatic, it saves in the cost of labor for handling salt, for mixing brine, and for distributing brine throughout the plant. It also cuts down waste and actually requires far less salt than older methods.

With all its economy, the Lixate Process produces *better* brine. Lixate Brine is bacteriologically and chemically pure. It meets the exacting standards of purity set by leading packers and canners of the finest foods. It is always clear—you never saw such sparkling, crystal clear brine! It is uniform—always the same strength, for it is always fully saturated.

AUTOMATIC OPERATION FOR ECONOMY

Recommended grades of Rock Salt are placed in the hopper. It flows by gravity to the Lixator. Fresh water enters through a spray nozzle, with automatic float valve control. Salt dissolves without agitation, is self-filtered, becomes fully saturated, and flows upward through the collecting chamber to the discharge pipe. Clean, sure, a constant supply, and at no operating cost, once the salt hopper is filled.



★Lixate Brine is now being used with economy for dyeing, salting out dyes, regenerating zeolite water softeners, and other uses in the textile mill. The installation above shows the Lixate Process in the plant of Classe Ribbon Works, Inc., of Anniston, Ala. NOTE: The International Salt Research Laboratory has helped many textile mills to make large savings by the use of salt (sodium chloride) instead of Glauber's salt (sodium sulfate). The advice and counsel of the International Salt Advisory Service on this subject, is offered freely and without obligation.

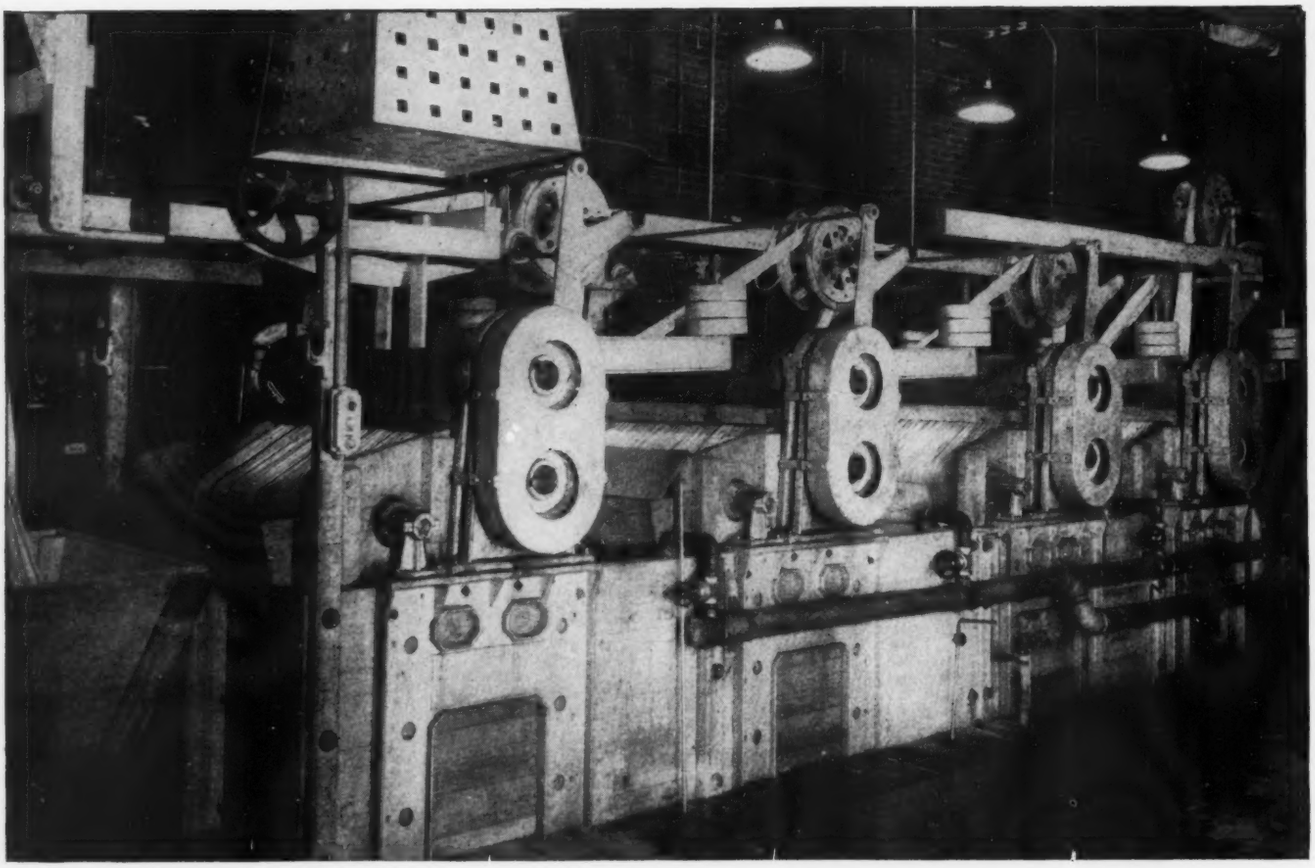
●

The Lixate Process was developed by the International Salt Research Laboratory. The advice and counsel of this outstanding authority on the uses of salt, are offered freely to all who use salt in industry. Write for a copy of the Lixate Book, describing the process and illustrating many installations in textile mills and other industrial plants. International Salt Company, Inc., Scranton, Pa., and New York, N. Y.

The **LIXATE**
REG. U. S. PAT. OFF.
Process
FOR MAKING BRINE

INTERNATIONAL SALT CO., INC.

GENERAL OFFICES—SCRANTON, PA., *and* NEW YORK CITY
SALES OFFICES: *Buffalo, N.Y.* • *Philadelphia, Pa.* • *Boston, Mass.* • *Baltimore, Md.* • *Pittsburgh, Pa.* • *Newark, N.J.* • *New York, N.Y.* • *Richmond, Va.* *Atlanta, Ga.* • *New Orleans, La.* • *Cincinnati, Ohio* • *St. Louis, Mo.* • REFINERIES: *Watkins Glen, N.Y.* • *Ludlowville, N.Y.* • *Avery Island, La.*
MINES: *Retsof, N.Y.* • *Detroit, Mich.* • *Avery Island, La.*



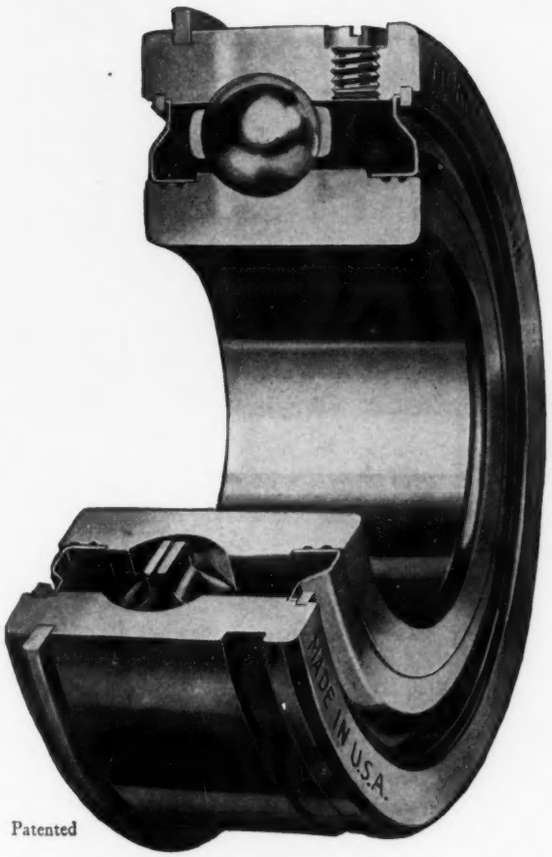
A Soap That Revolutionizes Scouring Operations

Armour's CERTIFIED SOAP—a revolutionary, new, formulated, pre-tested, vegetable soap for the textile industry—has aroused unusual interest and comment—has delivered amazing results wherever used. • In worsted mills, silk throwster plants, hosiery mills, wool combing companies, yarn dyeing companies, it has won instant acceptance because its chemical make-up assures instant solubility, thorough cleansing and quick, easy rinsing. • Order a test barrel or bag of Armour's CERTIFIED SOAP today. Obtainable in Flakes, Bar and Solid form.

INDUSTRIAL SOAP DEPARTMENT
ARMOUR AND COMPANY
1355 W. 31st STREET • CHICAGO, ILLINOIS

CARTRIDGE

SIMPLIFY YOUR DESIGN—DOUBLE YOUR GREASE CAPACITY—



Patented

MADE TO STANDARD DOUBLE-ROW WIDTHS WITH 100% GREATER GREASE CAPACITY

Available in Four Different Series

"3600".....with standard outer ring.
"43600".....with shoulder ring in outer ring.
"3600-J".....with refilling plug in outer ring.
"43600-J".....with shoulder ring and refilling plug in outer ring.

ELIMINATE DIRT HAZARD

WITH THIS

Ideal Self-Sealed Bearing

Can be packed with at least 100% more grease than any other self-sealed bearing—especially adapted, therefore, for continuous service for long periods.

Eliminates the dirt hazard and insures absolute retention of lubricant—by the use of flanged metal shields, recessed inner ring construction and two or more grease grooves, the combination affording a truly effective labyrinth.

Is equally efficient in retaining grease in horizontal or vertical position.

Flanged metal shields, though rigidly located by snap rings, are removable to facilitate inspection, cleaning or re-greasing of bearing.

Can be quickly regreased, either through built-in refilling plug opening or by removing metal shields.

Requires no lock nuts on shaft or clamping means in housing, because of wide contact areas due to double-row width of both rings—which also safeguard against "cocking" and prevent slippage or "peening".

Shortens over-all length of mounting and reduces overhang of shaft.

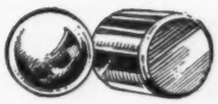
Reduces costs by simplifying design, eliminating protective closure parts, and saving attendant labor.

Available with shoulder ring, thus permitting a through bore in housing, the shoulder ring providing endwise location.

Placed on the market only after years of exacting tests in our laboratory and in the field under continuous operation, the "CARTRIDGE" BEARING has conclusively demonstrated its ECONOMY, EFFICIENCY and SUPERIORITY. A constantly increasing number of representative manufacturers of electric motors, machine tools, pumps, woodworking machinery, and other equipment is adopting it because of its proved merit. Write for Catalog showing typical "Cartridge" mountings.

NORMA-HOFFMANN BEARINGS CORPN., STAMFORD, CONN. U.S.A.

BEARING



A DOUBLE SAFEGUARD

● The workman's eyes are protected, not only by a metal guard which covers the high-speed grinding wheel, but by a sturdy pair of goggles as well. Twofold protection.

...YOU CAN DEPEND ON THIS CAUSTIC SODA THAT IS *TWICE* PURIFIED

● **Low in salt content, low in carbonates, and extremely low in iron, the electrolytic caustic soda produced by this Company is offered to the textile industry in an exceedingly pure form that meets the most exacting requirements.**

These advantages are made possible by an additional manufacturing process which is in effect a double purification. Impurities are so effectively removed that you will find this caustic soda fully dependable for use in your processes.

It is supplied in aqueous solution in 8,000 gallon tank cars as well as in solid, flake, or ground form in drums. Our technical staff will gladly help with all questions of pumping, piping, and dissolving. Why not write us today? Pennsylvania Salt Manufacturing Company, Widener Bldg., Philadelphia, Pa.
New York · Chicago · St. Louis · Pittsburgh · Tacoma · Wyandotte

We also produce high-grade electrolytic Hydrogen Peroxide, 100 volume, for use as a fool-proof bleaching agent. It is supplied in glass carboys, and aluminum drums. Stocks are conveniently located, and our service department is skilled in textile plant operation—ready to help with any difficult problems.

Other Pennsylvania Salt Products for the Textile Industry

Soda Ash
Sulphuric Acid
Hydrochloric Acid
Anhydrous and Aqua Ammonia
Sodium Hypochlorite
Carbon Bisulphide
Ammonium Persulphate

PENNSYLVANIA SALT MANUFACTURING COMPANY
Chemicals

A NEW *Super* EXTRACTOR FOR THE TEXTILE INDUSTRY!

TOLHURST
SUPREX

Revolutionary, this new Tolhurst *super*-extractor! In test after test, the SUPREX has demonstrated amazing performance . . . established records for speed, output, economy unmatched by any present day extractor. We confidently believe this new *super*-extractor will revolutionize accepted methods of extracting in textile mills. Mail coupon for bulletin describing the SUPREX.

50% to 100%
More Loads per Hour

48% to 66%
Faster Extraction

37% to 54%
Less Current

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American Machine and Metals,
CHICAGO DETROIT ATLANTA

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Send new SUPREX Bulletin.
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Mill.....
Street..... State.....
City.....

ALL LINED UP...

...against SALT CORROSION

What is the most common cause of corrosion in dyehouse equipment? Just the *common* salt you put in your dye tanks. So when you put salt in, make sure you put it into Monel. • Against Monel, salt and brine are well-nigh powerless. This strong, tough metal resists their destructive attack. It *cannot* rust, and it stands off corrosion for years. That is why you find Monel in food plants, in sea-going ships, from beginning to end of salt refineries . . . *and every place else where corrosion by salt is severe.* • Because Monel is also wear resistant and long-lived . . . and is resistant to corrosion by dyehouse liquors . . . it assures years of trouble-free dyeing at minimum cost. Write for further information on Monel for dyehouse equipment. Address:

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street New York, N. Y.

MONEL

Upper photo shows partial view of eight Monel-lined dye tanks in use in an eastern plant. Rolls, reels, baffle plates, heating units and tie rods are also made of Monel. Lower photo shows close-up of Monel lining after more than ten years' use.

"Monel" is a registered trade-mark of The International Nickel Company, Inc., which is applied to a nickel alloy containing approximately two-thirds nickel and one-third copper.